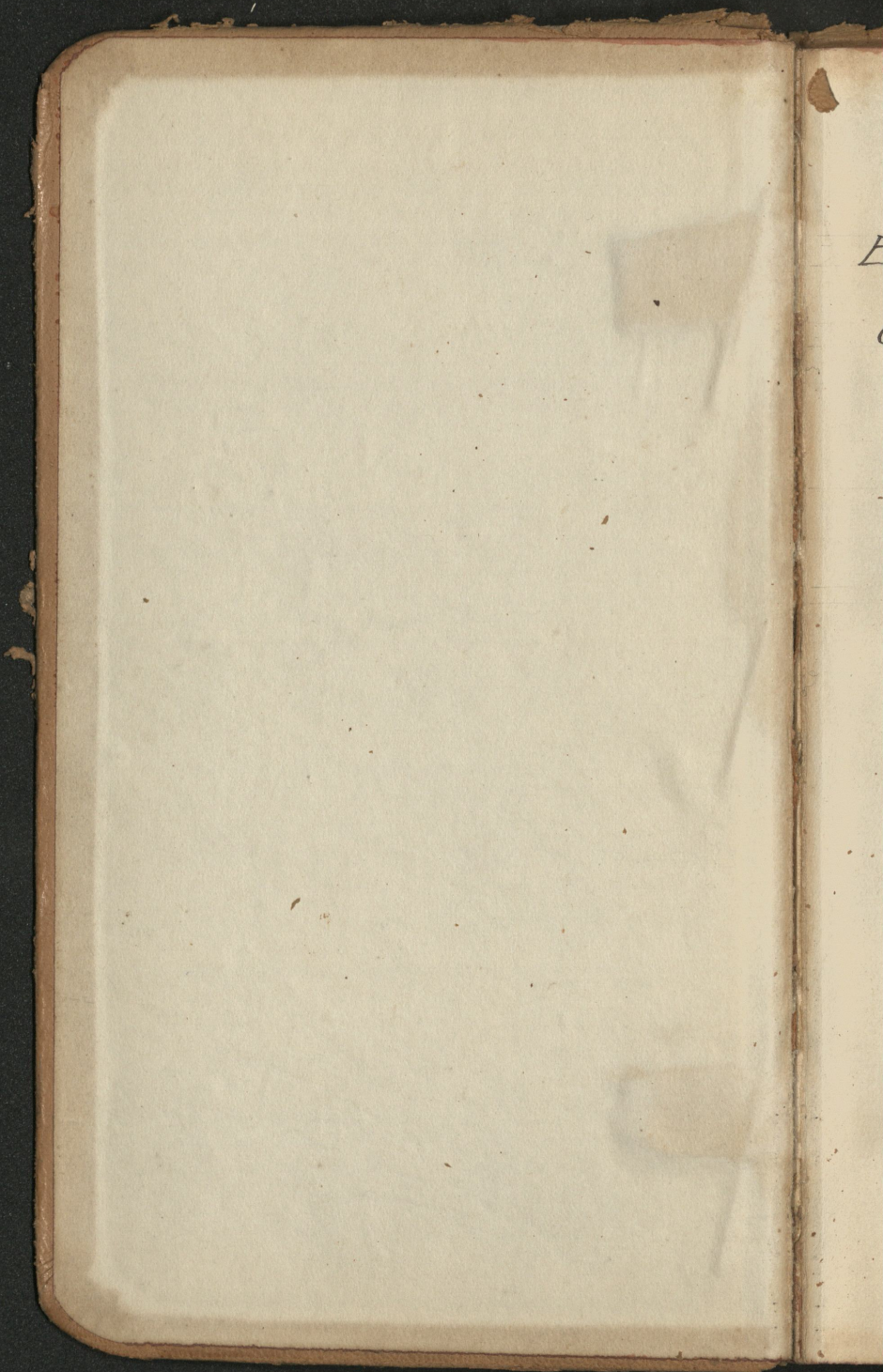


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LEVEL BOOK.

410.



BRADSHAW MOUNTAIN RAILROAD
CROWN KING BRANCH

Book No 3

Construction Notes

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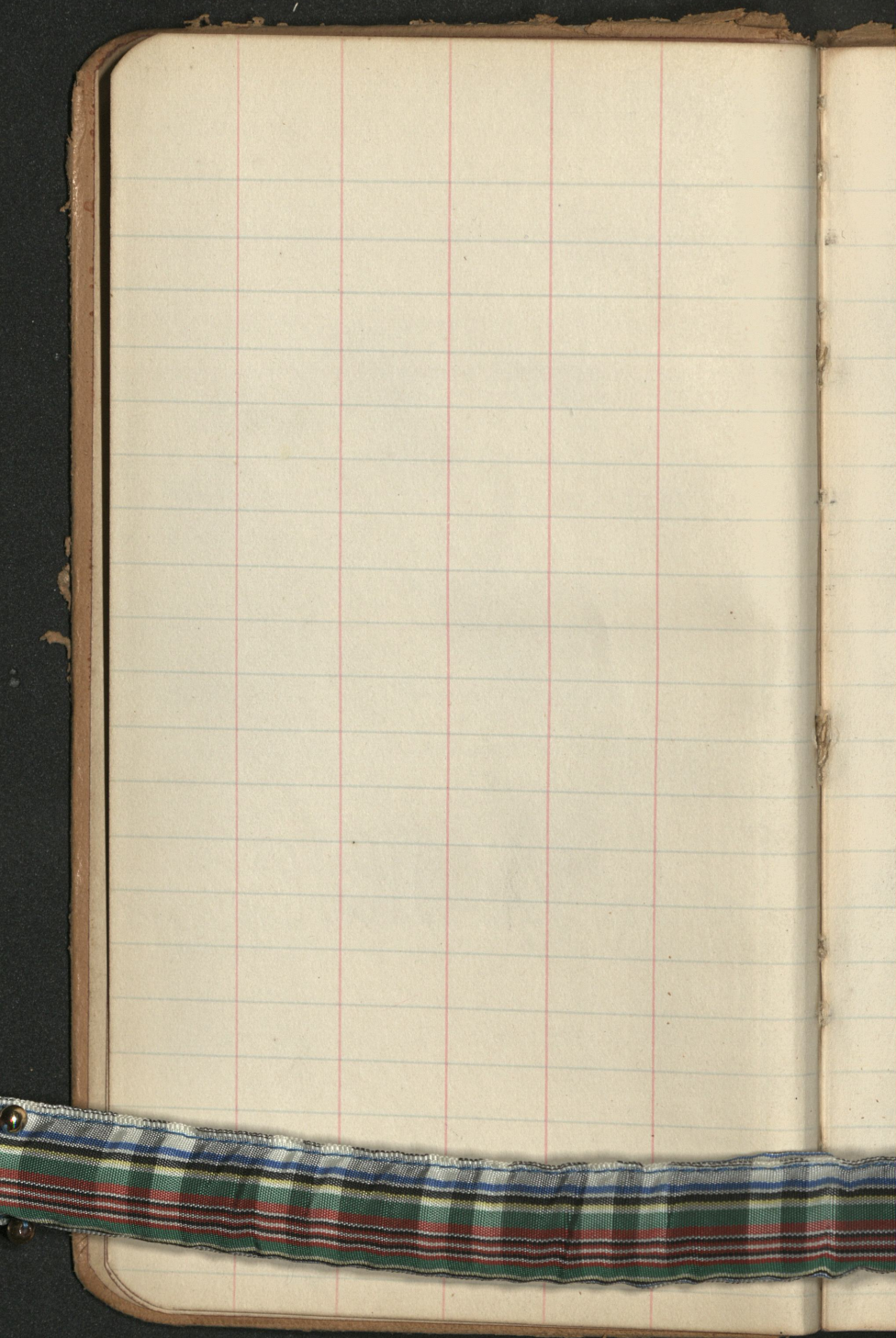
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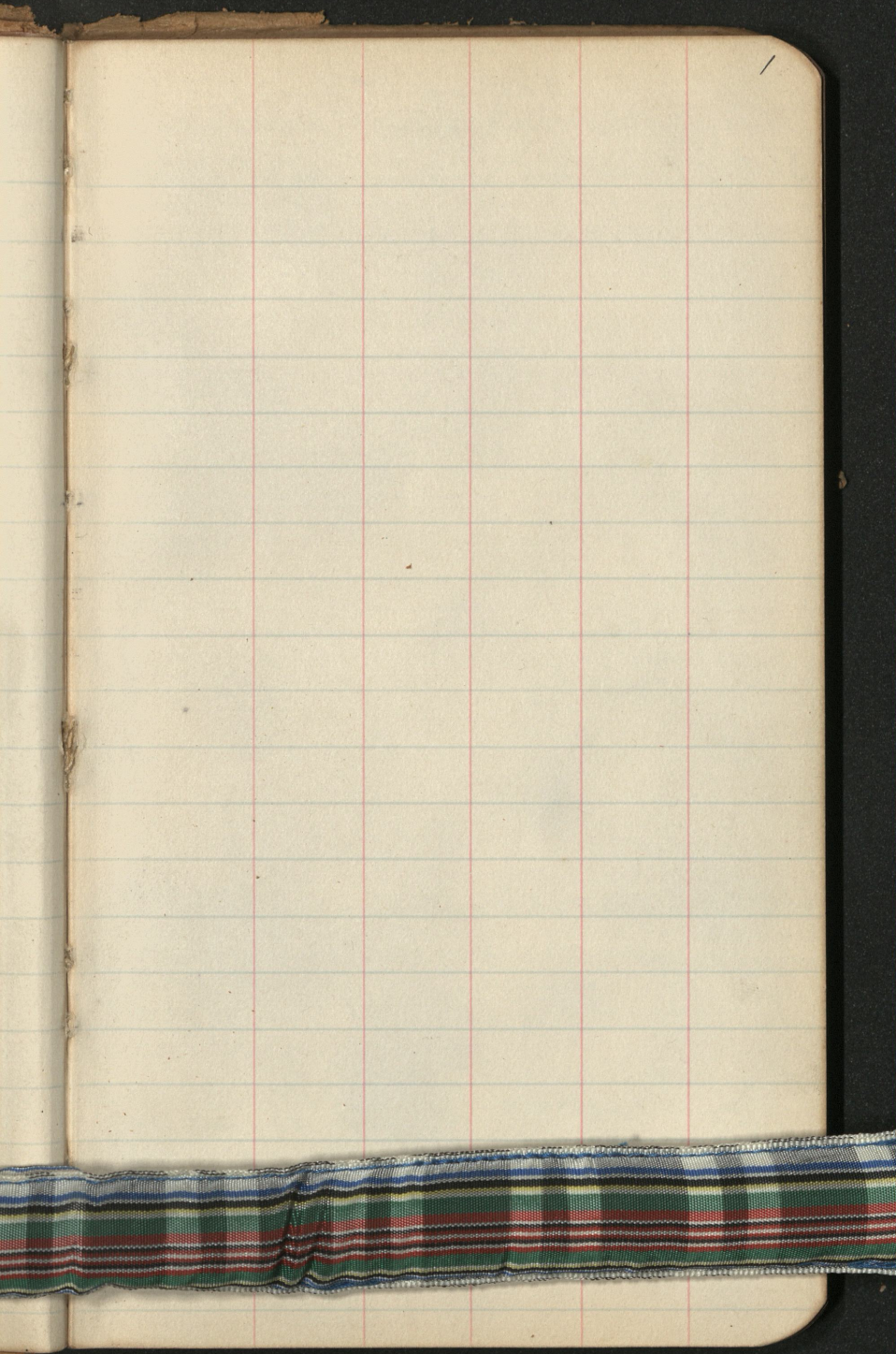
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Section 17

Station Grade L L R

818+50 3376.30

Spur on R

819

$\frac{416}{84}$

+0.8

$\frac{00}{16.0}$

RB on R 16.0

+50

0.71 -

$\frac{+31}{8.8}$

+3.5

$\frac{+32}{8.8}$

$\frac{+32}{11.8}$ RB on R 11.0

820

3374.20

$\frac{+75}{9.9}$

+7.4

$\frac{+72}{9.8}$

RB on R 8.0

Station Grade

L

C

R

820+60 337336

$\frac{+112}{10.8}$

+109

$\frac{+116}{10.9}$

821

$\frac{+124}{11.1}$

+94

$\frac{+7.0}{9.8}$

+25 0.41

$\frac{+106}{10.7}$

+6.0

$\frac{+5.0}{9.3}$

+75

$\frac{+3.3}{8.8}$

+26

$\frac{0.0}{8.0}$

+95

$\frac{0.0}{8.0}$

-22

$\frac{-7.7}{18.6}$

822 337140

$\frac{-5.7}{15.6}$

-6.0

$\frac{-11.8}{24.7}$

822+20

+65

$\frac{-16.4}{31.6}$

-196

$\frac{-21.0}{23.0}$ $\frac{-18.0}{34.0}$

+85 0.00

$\frac{-19.0}{35.5}$

-218

$\frac{-23.6}{14.0}$ $\frac{-21.2}{38.8}$

823+05 HB

$\frac{-20.6}{37.9}$ $\frac{-24.3}{7.0}$

-25.1

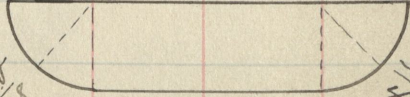
$\frac{-24.9}{7.0}$ $\frac{-23.4}{42.1}$

+50 Toe

$\frac{-28.5}{42.8}$

-30.0

$\frac{-29.2}{43.8}$

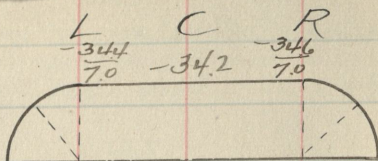


Areas		Cub. Yds.	
Cut	Fill	Exc.	Emb.
209.47		637.5	
		2854	
175.83		1381	
122.40		1458	
35.04	00	86	139
00	56.21	1215.4	139.1 S.G.
		1354.5	
		110.3	Emb'd 3478.7
	182.15		823.0 2316.7 C.Y. made
	805.48		from Cut So
			Balance 1162.0 C.Y.
			less 5% 58.1
			664.9 Borrow 1103.9 C.Y.
	989.67		Class. Earths.
			796.3 660 yds hauled 190
	1160.33		= 1260. yds hauled
		1070.3	See Page 24
		3478.7	

3478.7

Station Grade

825+14 Toe



825+65 H/B

$\begin{array}{r} -11.8 \\ 24.7 \end{array}$ $\begin{array}{r} -13.6 \\ 7.0 \end{array}$ -14.3 $\begin{array}{r} -15.3 \\ 7.0 \end{array}$ $\begin{array}{r} -20.5 \\ 37.8 \end{array}$

825+85

0.00

$\begin{array}{r} -6.2 \\ 76.3 \end{array}$ -7.2 $\begin{array}{r} 10.2 \\ 22.3 \end{array}$

826

3371.40

826+15

$\begin{array}{r} -5.5 \\ 15.3 \end{array}$ -6.2 $\begin{array}{r} -8.2 \\ 19.3 \end{array}$

+40

$\begin{array}{r} -6.1 \\ 16.2 \end{array}$ -8.2 $\begin{array}{r} -14.9 \\ 29.4 \end{array}$

+50

3371.40

827

$\begin{array}{r} -2.7 \\ 17.1 \end{array}$ -3.0 $\begin{array}{r} -3.8 \\ 12.7 \end{array}$

+25

0.00
+2.00

$\begin{array}{r} 0.0 \\ 8.0 \end{array}$ 0.0 $\begin{array}{r} -0.4 \\ 7.6 \end{array}$

+30

$\begin{array}{r} +0.4 \\ 8.1 \end{array}$ $+0.5$ $\begin{array}{r} 0.0 \\ 8.0 \end{array}$

828

$\begin{array}{r} +6.7 \\ 9.7 \end{array}$ $+6.0$ $\begin{array}{r} +5.4 \\ 9.4 \end{array}$

+50 3375.40

$\begin{array}{r} +10.3 \\ 10.6 \end{array}$ $+9.8$ $\begin{array}{r} +9.6 \\ 10.4 \end{array}$

Areas Cub yds
Cut Fill Exc. Emb

11888

55723

Sta 825+14 to 827+30

2791 Emb 2237.7 C.Y.

Made from Cut, R.

196.36

195.3

155.21

192.4

260.46

354.3

58.45

27.7

00

1.40

0.3

0.1

5.63

00

2237.7

144.3

105.70

266.9

182.50

422.8

834.3

144

Station Grade

L

C

R

829 3376.40

+146
11.7

+140

+135
11.4

+25

+149
11.7

+145

+133
11.3

+70

+133
11.3

+114

+101
10.5

+85

+148
11.0

+104

+91
10.3

830+40

+132
11.3

+119

+101
10.5

+70

+200

+103
10.6

+105

+88
10.2

831

+55
9.4

+43

+26
8.7

+20

+25
8.6

+22

00
8.0

+25

00
8.0

+07

00
4.0

-07
8.1

+50 3381.40

-85
19.8

-96

-71
14.0

-116
24.4

Areas Cub Yds
Cut Fill Exc Emb

834.3

274.10

Sta 827+25 to 831+50

256.3 Exc 2689.0 Cu Yds Solid Rock

279.55

Have 90.50 yds

" 196 N "

414.5

" 1510. from 829+68 to 834+5 = 6570

5158

" 420 " 830+40 to 834+50 = 59.0

made 239.5

217.86

Total haul 7160.

114.5

5648

194.36

425.0

222.91

227.0

185.60

142.7

71.31

36.9

28.26 00

3.0 0.3

4.20 1.05

Sta 831+20 to 832+08

Embank 862.2 Cy.

1.3

110.7 made from Cur S.

00 238.01

2455.5

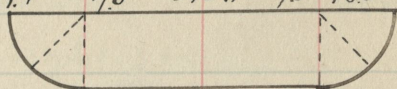
233.5 59.

2689.0 420.8

531.8

Station Grade

		L	C	R
831+80	H/B	$\frac{-86}{19.9}$	$\frac{-13.4}{7.0}$	$\frac{-16.8}{7.0}$
			$\frac{-14.4}{18.0}$	$\frac{-23.6}{42.4}$



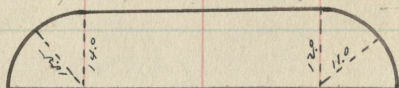
832+08 Toe

-21.5

833 3384.41

-10.6

833+15 Toe



833+27 H/B

$\frac{-11.3}{24.0}$	-7.1	$\frac{-6.4}{16.6}$
----------------------	------	---------------------

833+30

$\frac{-10.1}{22.2}$	-6.2	$\frac{-6.4}{16.6}$
----------------------	------	---------------------

834

$\frac{0.0}{8.0}$	-0.7	$\frac{-2.9}{11.4}$
-------------------	------	---------------------

+30

$\frac{+1.8}{8.5}$	+0.8	$\frac{0.0}{8.0}$
--------------------	------	-------------------

835

$\frac{+8.2}{10.1}$	+7.4	$\frac{+6.4}{9.6}$
---------------------	------	--------------------

+30

$\frac{+9.4}{10.4}$	+7.8	$\frac{+6.7}{9.7}$
---------------------	------	--------------------

+70 3393.18

$\frac{+2.9}{8.7}$	+2.3	$\frac{+1.7}{8.4}$
--------------------	------	--------------------

Threads Cub.yds
Cut Fill Exc. Emb

519.51

531.8

330.4

862.2

50.5

206.08

Sta 833+15 to 834+30

Emb 330.8 Cy.

21.3 made from Cut N.

178.03

252.7

00

16.94

5.1

6.3

13.80

00

330.8

Slip 4.2

188.1 Sta 834 to 835+95 Exc 616.7 Cy.

131.29

class Slips L.R. = 23.5 Cy.

Slip

7.8

Balance S. R. = 593.2 "

152.3

have 926.80 free

" 78. N "

Slip 6.5

" 100 from 834+80 to 833+35 = 145

134.0

" 220 " 835+15 to 837+15 = 440

" 24 from 835 to 842+55 = 185

Total have = 770

38.07

9.3

512.3

Station Grade

L

C

R

835+80 3393.18

+1.4
8.4

+0.8

00
80

+95

00
80

-0.7

-2.2
10.3

836+50 ⁺³²⁵

-2.4
10.6

-3.8

-5.0
14.5

837

-3.6
12.4

-4.8

-6.3
16.5

837+130 3397.83

+40

-4.1
13.2

-5.2

-6.8
17.2

+80

-1.0
8.5

-0.5

00
80

+90

00
80

+1.1

+1.6
8.4

838+15 ⁺³⁰¹

+5.6
9.4

+5.8

+4.9
9.2

+35

+7.2
9.8

+8.0

+7.2
9.8

+75 3402.70

+8.8
10.2

+7.4

+7.6
9.9

Areas		Cub. Yds
Cut	Fill	Exc. Emb
12.16	00	512.3

00	14.10	23 2.6
		514.6
		102.1 56.

Sta 835+80 to 837+90

		616.7
		89.3 Emb. 513.5 Cy.
73.59		Made from Cuts
		164.4

	104.01	
		163.9
	117.19	
		92.4

00	7.62	
		1.9 0.9
		513.5
15.42	00	

		51.6
		Sta 837+80 to 840+90 Exc. 1302.8
95.94		Class Slips L.R. = 75.4 Cy.
	Slip 11.4	Balance S.R. = 1227.4 "
	85.9	

136.00		Haul 62.7 n for
		" 1070. from 839 to 842+40
	Slip 14.8	= 2640 Yds. Haul
	204.4	3640

139.97	Slip 22.7	
	351.6	

744.3

Station Grade

L

C

R

8 839+35 340+51

$\frac{+102}{10.6}$

+9.9

$\frac{+83}{10.1}$

+50

$\frac{+96}{10.4}$

+9.0

$\frac{+83}{10.1}$

+90

$\frac{+44}{9.1}$

+3.1

$\frac{+21}{8.5}$

840+10

$\frac{+6.0}{9.5}$

+5.5

$\frac{+4.3}{9.1}$

+25

+3.01

$\frac{+22}{8.6}$

+1.4

$\frac{00}{8.0}$

+35

$\frac{00}{8.0}$

-0.8

$\frac{-1.6}{9.4}$

+50

$\frac{+0.6}{8.2}$

+0.4

$\frac{00}{8.0}$

+70

$\frac{+1.4}{8.4}$

+1.4

$\frac{+1.3}{8.3}$

840+70³ 3408.58

+80

$\frac{+1.3}{8.3}$

+0.7

$\frac{00}{8.0}$

+90

+3.25 3409.21

$\frac{00}{8.0}$

-0.4

$\frac{-2.6}{10.9}$

Areas Cubyds.

Cut Fill Exc. Emb

176.46

744.3

Sip 6.8

94.5

163.85

Sip 17.4

160.8

53.28

Sip 2.3

53.9

92.35

31.3

20.42 00

2.5 1.6

00 12.56

1.0 2.3

5.64 00

3.9

10.4

22.49

6.2

10.90 00

1.3 1.6

00 12.88

1132.7

170.456

1302.8

252.5

254.1

Station	Grade	L	C	R
841+30	3410.51	$\frac{-8.4}{19.6}$	-9.3	$\frac{-17.6}{33.4}$
+45		$\frac{-11.7}{24.6}$	-12.8	$\frac{-10.8}{23.2}$
+80		$\frac{-5.9}{15.9}$	-5.3	$\frac{-6.3}{16.5}$
842+20		$\frac{-1.4}{9.1}$	-3.4	$\frac{-6.0}{16.0}$
+50		$\frac{-5.3}{15.0}$	-6.7	$\frac{-10.0}{22.0}$
+70	3.25	$\frac{-7.8}{18.7}$	-12.1	$\frac{-14.2}{28.3}$
843+10		$\frac{-10.6}{22.9}$	-16.3	$\frac{-23.2}{41.8}$
+30		$\frac{-11.3}{24.0}$	-15.8	$\frac{-26.6}{46.9}$
+40		$\frac{-12.6}{25.9}$	-15.4	$\frac{-26.0}{39.0}$ $\frac{-24.6}{43.9}$
+60	3417.97	$\frac{-15.9}{30.9}$	-21.4	$\frac{-21.3}{16.0}$ $\frac{-17.7}{33.6}$

Areas Cub. Yds
Cut Fill Exc Emb

337.45

254.1

Sta 840+80 to 844+60

200.6 Emb 480.9 Cu yds

384.67

473.9 Cu. made

332.6 from cuts balance

128.56

Borrow L. R. 70.0 Cu.

146.0

68.57

136.7

177.50

199.6

361.35

745.9

645.60

495.7

692.76

261.8

720.93

576.5

835.67

692.9

404.24

✓ 274

Station Grade L C R

843+85 ^{3418.78} $\begin{array}{r} -20.6 \\ 37.9 \end{array}$ -16.1 $\begin{array}{r} -14.6 \\ 28.9 \end{array}$

843+97 ^{3419.20} $\begin{array}{r} -6.4 \\ 16.6 \end{array}$ -8.1 $\begin{array}{r} -8.6 \\ 19.9 \end{array}$

844+25 $\begin{array}{r} -6.4 \\ 16.6 \end{array}$ -8.1 $\begin{array}{r} -8.6 \\ 19.9 \end{array}$

+55 $\begin{array}{r} 0.0 \\ 8.0 \end{array}$ -1.1 $\begin{array}{r} -1.9 \\ 9.9 \end{array}$

+60 $\begin{array}{r} +1.2 \\ 8.3 \end{array}$ +0.2 $\begin{array}{r} 0.0 \\ 8.0 \end{array}$

+85 $\begin{array}{r} +6.8 \\ 9.7 \end{array}$ +5.5 $\begin{array}{r} +4.2 \\ 9.1 \end{array}$

845+15 $\begin{array}{r} +8.5 \\ 10.1 \end{array}$ $\begin{array}{r} +9.4 \\ 3.0 \end{array}$ +8.2 $\begin{array}{r} +5.6 \\ 9.4 \end{array}$

+50 $\begin{array}{r} +5.7 \\ 9.4 \end{array}$ +5.0 $\begin{array}{r} +4.2 \\ 9.1 \end{array}$

846 $\begin{array}{r} +4.4 \\ 9.1 \end{array}$ +3.3 $\begin{array}{r} +2.1 \\ 8.5 \end{array}$

+50 $\begin{array}{r} +2.2 \\ 8.6 \end{array}$ +1.0 $\begin{array}{r} 0.0 \\ 8.0 \end{array}$

+80 ^{3427.70} $\begin{array}{r} +0.9 \\ 8.2 \end{array}$ $\begin{array}{r} 0.0 \\ 5.0 \end{array}$ -1.3 $\begin{array}{r} -2.9 \\ 11.4 \end{array}$

Areas Cub. Yds
Cut Fill Exc. Emb

4047.4

660.94

638.0

20032

120.5

00 16.49

0.4 1.0

6.43 00 4801.9

47.3 Sta 844+55 to 847+60 Exc

95.70

679.5 Cu. Yds.

Slip 2.9 class Slips L.R. = 190 cu. y.

132.0 Balance Solid Rock = 660.5 "

141.96

Haul 177.0 So far

Slip 7.4 " 400. from 845+65 to 843+95
147.6 = 680 yds Haul

85.85

Slip 7.2

130.4

55.04

Slip 1.5

66.8

17.10 00

10.3 7.7

1.35 20.81

14.3 10.3

568.1 18.0

2

Station Grade

L

C

R

84.7+20 3428.90

+2.2
8.6

+1.1

00
80

+60

00
80

-0.6

-6.5
16.9

+75

-1.2
8.8

-3.3

-6.4
16.6

+85

00
80

-1.7

-3.0
11.5

+95

+3.01

+1.6
8.4

+0.6

00
80

848+50

+7.4
9.9

+5.8

+4.6
9.2

+90

+11.7
10.9

+10.0

+7.5
9.9

848+98 3434.30

849+20

+12.2
11.1

+10.4

+9.2
10.3

+60

+12.5
11.1

+11.0

+9.4
10.4

+80

+3.25

3436.94

+14.4
11.6

+9.5

+7.3
9.8

Areas Cub yds
Cut Fill Exc Emb

17.93 00

568.1

18.0

Sta 846+50 to 847+95

00

30.19

8.9
577.0

14.9

Emb. 81.3 C.Y.

made from Cuts

102.5 = 07.56

679.5

27.4

68.51

17.7

00

27.08

14

3.3

11.32

00

81.3

116.8

103.39

Slip 15.8

210.5

Sta 847+85 to 850+15 Emb. 1359.2

180.80

Class Slip to Lo Rock 133.8 C.Y.

Balance Solis " 1225.4 "

Slip 16.5

209.8

Haul 150 N. for

Haul 475 So for

196.88

" 1030 from 849+20 to 843+45

= 5930. Haul

Slip 40.9

298.3

205.85

Borrow for Backfilling

Slip 39.0

146.0

off top of Cut
40.0 C.Y. Lo Rock

188.45

Slip 21.6

110.3

1226.9

Station	Grade	L	C	R
850+10	3437.91	$\frac{+15}{8.4}$	+0.5	$\frac{00}{8.0}$

+15	$\frac{00}{8.0}$	-1.5	$\frac{-2.7}{11.1}$
-----	------------------	------	---------------------

+50	$\frac{-7.6}{18.4}$	$\frac{-15.0}{7.0}$	$\frac{-18.6}{34.9}$
-----	---------------------	---------------------	----------------------

+65	$\frac{-9.4}{21.1}$	$\frac{-11.2}{17.0}$	$\frac{-30.8}{53.2}$
-----	---------------------	----------------------	----------------------

+90	$\frac{-3.2}{11.8}$	-7.3	$\frac{-24.2}{43.3}$
-----	---------------------	------	----------------------

851+25	$\frac{-2.6}{10.9}$	-5.5	$\frac{-13.2}{26.8}$
--------	---------------------	------	----------------------

+60	$\frac{00}{8.0}$	-3.8	$\frac{-11.0}{32.5}$
-----	------------------	------	----------------------

852	$\frac{+16}{8.4}$	$\frac{00}{3.5}$	$\frac{-8.3}{19.5}$
-----	-------------------	------------------	---------------------

+25	$\frac{+2.6}{8.7}$	$\frac{00}{3.0}$	$\frac{-5.3}{15.0}$
-----	--------------------	------------------	---------------------

+45	$\frac{00}{8.0}$	-1.8	$\frac{-5.8}{15.7}$
-----	------------------	------	---------------------

Areas Cub yds.

Cut Fill Exc Emb

10.10

00

1226.9

0.6 1.5

00

23.78

1227.5

1317.59

1359.2

377.9

559.25

Sta 850+10 to 854+10

331.8 Emb for 2538.7 cu.

635.26

made from Cuts.

431.6

297.02

295.6

158.98

191.5

00

136.45

1.8

137.1

Sta 851+60 to 852+45

3.60

48.61

Exc 8.1 cu. L.R.

4.7

35.3

6.50

27.55

1.6

25.6

8.1

00

41.63

169.5

1997.4

Station	Grade	L	C	R
852+80	3446.69	-3.9 12.9	-8.1	-13.1 26.7

853		-3.1 11.7	-7.0	-13.8 27.7
-----	--	--------------	------	---------------

+15	+3.25	-3.1 12.6	-7.7	-10.6 22.9
-----	-------	--------------	------	---------------

+40		-1.3 9.0	-3.4	-10.2 22.3
-----	--	-------------	------	---------------

853+54	3449.10	-1.7 9.6	-4.7	-11.7 24.6
+55				

+75		0.0 8.0	-1.2	-8.0 19.0
-----	--	------------	------	--------------

854		0.0 8.0	-0.5	-1.4 9.1
-----	--	------------	------	-------------

+10	+3.07	+3.1 8.8	+2.3	0.0 8.0
-----	-------	-------------	------	------------

+40		+7.1 9.8	+5.5	+2.8 8.7
-----	--	-------------	------	-------------

854+50	3452.05			
--------	---------	--	--	--

+70	3452.61	+7.7 9.9	+4.5	+2.1 8.5
-----	---------	-------------	------	-------------

Areas Cub yds
Cut Fill Exc Emb

219.88

1997.4

154.4

197.05

106.6

186.73

129.7

93.46

61.3

127.27

63.5

44.20

24.7

00

9.17

3.9

1.1

31.72

00

2.0

2538.7

Ledge 2.0 C.Y.

67.9

90.48

slip 2.7

95.0

80.60

127.8

299.3

Station Grade

855 3453.46

L

C

R

$\frac{+12.0}{11.0}$

+8.1

$\frac{+4.9}{9.2}$

+50

$\frac{+12.5}{11.1}$

+8.1

$\frac{+5.4}{9.3}$

+85

$\frac{+12.0}{11.0}$

+8.4

$\frac{+5.7}{9.4}$

856

$\frac{+10.8}{10.7}$

+6.8

$\frac{+4.9}{9.2}$

+25

$\frac{+12.8}{11.2}$

+10.2

$\frac{+7.1}{9.8}$

+50

$\frac{+11.0}{10.8}$

+6.7

$\frac{+7.1}{8.5}$

+70

$\frac{+8.9}{10.2}$

+4.9

$\frac{+1.7}{8.4}$

+72

$\frac{+8.0}{10.0}$

+3.8

$\frac{0.0}{8.0}$

+80

$\frac{+5.6}{9.4}$

+1.1

$\frac{0.0}{4.0} \frac{-2.7}{11.1}$

+85 3458.71

$\frac{+6.2}{9.6}$

+3.4

$\frac{0.0}{8.0}$

+2.84

Areas
Cut Fill Exc Emb

299.3

149.41

sp 22.2
281.1

155.22

Slip 14.2
201.4

Sta 854 to 857 + 60 Exc 1626.3

Class. Slips L.R. 39.1 cut
Balance Solid R. 1587.2

156.48

Haul 77.0 So jpr
79.7 " 108.0 N "

130.46

" 1240 from 855 + 80 to 851 + 15
= 5770 yds Haul

146.8

186.70

140.6

117.06

75.9

87.97

5.7

66.20 00

14.2 0.4

29.77 4.06

7.8 0.3

54.72 00

9.7

46.4

1335.3

✓
148

Station Grade

857 3459.14

L C R
 $\begin{array}{r} +9.3 \\ 10.3 \end{array}$ +6.2 $\begin{array}{r} +3.8 \\ 9.0 \end{array}$

+30 $\begin{array}{r} +2.84 \\ + \end{array}$

$\begin{array}{r} +3.5 \\ 8.9 \end{array}$

+1.4

$\begin{array}{r} 0.9 \\ 8.0 \end{array}$

+32.5 3460.07

+55

$\begin{array}{r} +1.0 \\ 8.3 \end{array}$

$\begin{array}{r} 0.0 \\ 4.0 \end{array}$ -1.0

$\begin{array}{r} -3.6 \\ 12.4 \end{array}$

+60

$\begin{array}{r} 0.0 \\ 8.0 \end{array}$

-2.4

$\begin{array}{r} -4.4 \\ 13.6 \end{array}$

+85

$\begin{array}{r} -5.7 \\ 15.6 \end{array}$

-11.0

$\begin{array}{r} -17.1 \\ 32.7 \end{array}$

858

$\begin{array}{r} +3.07 \\ + \end{array}$

$\begin{array}{r} -5.5 \\ 15.3 \end{array}$

-7.0

$\begin{array}{r} -12.0 \\ 25.0 \end{array}$

+15

$\begin{array}{r} -3.5 \\ 12.3 \end{array}$

-5.4

$\begin{array}{r} -8.6 \\ 19.9 \end{array}$

+28.5 3463.02

+55

$\begin{array}{r} -9.7 \\ 21.6 \end{array}$

-15.3

$\begin{array}{r} -17.1 \\ 32.7 \end{array}$

+70

$\begin{array}{r} +3.32 \\ + \end{array}$

$\begin{array}{r} -13.6 \\ 27.4 \end{array}$

-10.9

$\begin{array}{r} -13.2 \\ 26.8 \end{array}$

859 3465.39

$\begin{array}{r} -6.4 \\ 16.6 \end{array}$

-6.5

$\begin{array}{r} -7.9 \\ 18.9 \end{array}$

Heads Cubyas
Cut Fill Exc. Emb

1335.3

112.23

76.7

25.83 00

12.9 64

2.00 20.80

0.1 5.8

00

41.32

1475.0

201.3 50.

1626.3

179.1

345.45

152.2 Sea 857 + 306859 + 85

202.30

Emb'd 1756.4 C.Y.

92.1 made from cuts

129.29

472.9

509.10

249.5

389.19

308.1

165.43

163.5

1629.6

✓

J. A. H.

Station	Grade	L	C	R
859	+40	$\frac{-0.4}{7.6}$	-21	$\frac{-7.6}{18.4}$

+55	$\frac{-2.9}{11.4}$	-7.2	$\frac{-10.5}{22.8}$
-----	---------------------	------	----------------------

+70	$\frac{00}{80}$	-2.2	$\frac{-3.9}{12.9}$
-----	-----------------	------	---------------------

+85	$\frac{+30}{8.8}$	+1.3	$\frac{00}{8.0}$
-----	-------------------	------	------------------

860	+15	$\frac{+64}{9.6}$	+4.0	$\frac{+2.0}{8.5}$
-----	-----	-------------------	------	--------------------

+40	$\frac{+5.9}{9.5}$	+2.9	$\frac{00}{8.0}$
-----	--------------------	------	------------------

+65	$\frac{+2.7}{9.9}$	+5.9	$\frac{+4.4}{9.1}$
-----	--------------------	------	--------------------

861	+30	$\frac{+15.2}{11.8}$	+13.4	$\frac{+10.2}{10.6}$
-----	-----	----------------------	-------	----------------------

+50	$\frac{+14.5}{11.6}$	+12.0	$\frac{+8.9}{10.2}$
-----	----------------------	-------	---------------------

+80	$\frac{+7.1}{9.8}$	+5.0	$\frac{+2.3}{8.6}$
-----	--------------------	------	--------------------

Areas Cub. Yds
Cut Fill Exc. Emb

55.30

1629.6

62.6

170.02

57.4

00

36.64

4.2

6.8

22.92

00

1756.4

51.5 Sta. 859+40 to 863+30

69.80

Exp. 1345.4 Cy.

55.0 Class Slips To Run 34.4 Cy.

48.98

Balance Cut S.R. 1311.0 "

Haul 100.5 So far

71.0

" 40.2 opposite "

" 65.0 H "

104.45

" 930 from 861+20 to 888+70 = 2330

Slip 9.3

marks 21.5

428.7

251.68

Slip 8.8

176.3

224.40

Slip 15.5

171.1

83.60

Slip 0.8

19.5

1011.7

✓

Station	Grade	L	C	R
---------	-------	---	---	---

861+90 3474.85

+3.1
8.8

+1.1

0.0
8.0

+95

+1.4
8.4

0.0
4.5 -1.4

-6.2
16.3

862+20

+5.1
9.3

+2.2

0.0
8.0

+35

+5.1
9.4

+2.7

+0.6
8.2

+40

+5.8
9.5

+2.3

0.0
8.0

+55

+4.1
9.2

+1.0

0.0 -5.9
2.5 15.9

+70

+300

+0.3
8.1

0.0
7.0 -2.1

-7.0
17.5

+75

+2.1
8.5

+0.3

0.0
8.0

+90

+5.7
9.4

+3.4

+2.0
8.5

863+15 3478.60

+3.1
8.8

+1.4

0.0
8.0

Areas Cub Yds
Cut Fill Exc. Emb

21.64 00

1011.7

2.2

2.2

Sta 86+40 to 86+20.

2.46 36.26

Embank 13.4 Exp. made
from cut on side

19.4

11.2

13.4

39.43 00

24.6

48.96

8.5

43.33 00

18.9

25.0

Sta 86+40 to 86+75

24.65 13.27

Embank 45.7 made
from cut on side

6.9

17.6

15 50.23

1.0

3.1

1088 00

45.7

20.0

61.23

39.5

24.16 00

4.5

4.0

1157.2 59.

188.2

13454

✓

988

Station Grade

863+30 3479.05

L C R

00 80 -1.3 -2.7
11.1

+50

-4.0 13.0 -5.8 -8.2
19.3

+80

-13.2 26.8 -15.8 -21.3
39.0

864 3481.15

-9.2 20.8 -8.8 -12.2
25.3

+35

-3.5 12.3 -5.5 -9.7
21.6

+55

-1.5 9.9 -4.6 -12.3
25.5

+70

-2.6 10.9 -6.6 -9.2
20.8

+80

00 80 -1.1 -3.0
11.5

865+10

+3.3 8.8 +2.3 0.0
8.0

+15 3484.80

+2.8 8.7 +1.8 +0.5
8.1

Areas Cub Yds
Cut Fill Exc Emb

00	21.87		4.0	✓
				863.15 + 865.10
	136.37		58.6	Emb'd 1319.0 made from cuts at ends.
			431.6	
	640.57		340.1	
	277.74		270.4	
	139.43		99.2	
	128.34		76.2	
	145.91		31.0	
00	21.23			
		12.0	7.9	
32.52	00		1319.0	
		5.6		
28.32	00	9.4	0.5	
		27.0		

Station Grade

L

C

R

865+30 3485.28

+1.4
8.4

0.0

0.9
8.4

+40

+2.5
8.6

+3.0

0.0
8.0

+60

+5.9
9.5

+4.0

+1.7
8.4

865+62 3486.30

866

+3.7
8.9

+1.8

0.0
8.0

+15

0.0
8.0

-1.0

-4.4
13.6

+35

-6.1
16.2

-10.0

-13.2
26.8

+75

0.0
8.0

-1.2

-4.5
9.3

866+57 3489.61

+85

+1.2
8.3

+1.2

0.0
8.0

867+20

+6.6
9.7

+5.3

+4.7
9.2

+55 3492.88

+13.5
11.4

+9.9

+10.2
10.6

Cut Fill Exc. Emb

5.60 3.15

27.0 05

7.5 0.4

34.90 00

0.9

Sta 864+80 to 866+15 Exp.

37.4 206.2 C.Y. Solid Rock

66.20

Have 1/2 each way for

71.3

30.01 00

5.6 4.9
148.8

00 26.20

57.4

Sta 866 to 866+85

206.2

114.4 Emb 342.1 C.Y.

282.55

Made from Cuts

220.9

00 15.63

1.8 1.9

14.58 00

342.1

71.2

95.29

193.8

203.70

356.0

622.8

✓

44

Station Grade

L

C

R

867+90 3493.03

+182
12.6

+17.0

+159
12.0

868+05

+181
12.7

+18.6

+17.0
12.3

+40

+175
12.4

+14.1

+12.1
11.0

+65

+175
12.4

+13.7

+108
10.7

869

+119
11.0

+9.3

+7.0
9.8

+25

+27
8.7

+1.0

00
8.0

+35

00
8.0

-1.7

-1.8
9.7

+50

-2.9
11.4

-5.4

-9.7
21.6

+70

-4.5
13.8

-8.8

-6.2
16.3

+85 3500.56

-7.6
18.4

-5.4

-4.9
14.4

Areas		Cub. Yds	
Cut	Fill	Exc	Emb
345.50		622.8	Sta 866+75 to 869+35 Exp.
		200.2	2003.8 <u>Cut ds Solid Rock</u>
375.30			Haul 166.0 Super
		426.9	" 212.0 N "
283.37			" 186. from 867+85 to 863+80 = 3183.
			" 300. " 868+65 to 875+90 = 2175.
		256.9	" 421. " 868+35 to 880+30 = 5032
			Total Haul <u>10390.</u>
271.44			
		287.6	
172.32			
		88.6	
19.15	00		
		2.4	2.6
		1885.4	
00	21.35	118.4	= 0856.
		2603.8	
		42.9	Sta 869+25 to 870+20
133.20			Emb'd 302.9 Cy.
		112.3	made from Cuts
169.89			
		83.9	
132.31			
		57.1	
		2988	

Station	Grade	L	C	R
870+05	3501.22	$\frac{-34}{12.1}$	-1.0	$\frac{00}{8.0}$

+20		$\frac{0.0}{8.0}$	+1.1	$\frac{+1.9}{8.5}$
-----	--	-------------------	------	--------------------

+50	+3.34	$\frac{+4.8}{9.2}$	+5.4	$\frac{+7.1}{9.8}$
-----	-------	--------------------	------	--------------------

+85		$\frac{+9.9}{10.5}$	+11.0	$\frac{+12.4}{11.1}$
-----	--	---------------------	-------	----------------------

871+03 3504.52

871+25		$\frac{+12.3}{11.1}$	+12.9	$\frac{+13.6}{11.4}$
--------	--	----------------------	-------	----------------------

+55	+2.67	$\frac{+11.5}{10.9}$	+10.2	$\frac{+9.5}{10.4}$
-----	-------	----------------------	-------	---------------------

872	3507.09	$\frac{+5.8}{9.5}$	+4.9	$\frac{+3.8}{9.0}$
-----	---------	--------------------	------	--------------------

Areas	Cub. yds
Cut	Fill Exc Emb
00	21.95

298.8

3.1 41

16.68 00

302.9

64.2 Sta 870+05 to 872 Exc.

98.90

1168.6 Cub. yds. Solid Rock

198.9 Haul 579. from 871+50 to 873+50 = 1156.

208.00

" 501 " 870+85 to 875+45 = 2304

Total haul 3460.

338.3

248.72

245.2

192.63

230.3

1080.0

83.73

0.856

88.6

1168.6

✓

SECTION 17

Page	Acres	Excavation—Cub. Yds				Total
		Total in Cuts	Earth	Loose Rock	Solid Rock	Embank't Cub. Yds.
2		1354.5 ✓		75.7 ✓	1278.8 ✓	
3						3478.7 ✓
4						2237.7 ✓
5		2689.0 ✓			2689.0 ✓	
5						862.2 ✓
6						330.8 ✓
6		616.7 ✓		23.5 ✓	593.2 ✓	
7						513.5 ✓
7		1302.8 ✓		75.4 ✓	1227.4 ✓	
9						4801.9 ✓
10		679.5 ✓		19.0 ✓	660.5 ✓	
11						81.3 ✓
11		1359.2 ✓		133.8 ✓	1225.4 ✓	
12						40.0 ✓
12						2538.7 ✓
12		8.1 ✓		8.1 ✓		
14		1626.3 ✓		39.1 ✓	1587.2 ✓	
15						1756.4 ✓
16		1345.4 ✓		34.4 ✓	1311.0 ✓	
17						13.4 ✓
17						45.7 ✓
18						1319.0 ✓
19		206.2 ✓			206.2 ✓	
19						342.1 ✓
20		2003.8 ✓			2003.8 ✓	
20						362.9 ✓
21		1168.6 ✓			1168.6 ✓	
		14360.1 ✓		409.0 ✓	13951.1 ✓	18664.3 ✓

SUMMARY

Cu. Yds Bank made from Cuts	Cu. Yds Shrinkage Deducted	Borrow- Earth	Cu. Yds. Lease Rock	Cu. Yds Hauled 100'	F.F.M. Lumber in Culverts
78.7	2316.7	58.1	1103.9	2540	
37.7	2237.7			1260	
62.2	862.2			7160	5648
30.8	330.8				
13.5	513.5			770	
01.9	4731.9			700	2640 3640
81.3	81.3			680	
40.0				400	5930
38.7	2538.7				
56.4	1756.4			5770	
13.4	13.4			2330	
45.7	45.7				
19.0	1319.0				
42.1	342.1			10390	
2.9	302.9			3460	
4.3	17392.3	58.1	1103.9	110.0	42930
					42418

SECTION 17.COST.

EXCAVATION, L. ROCK, 409 cu. yds @ $\frac{\#}{0.32}$ = 130.88

" , S. ROCK, 1395.1 " " @ 0.80 = 11160.88

BORROW, EARTH, 11039 " " @ 0.12 = 132.47

" , L. ROCK, 110.0 " " @ 0.30 = 33.00

HAUL 100 FT. 42418 " " @ 0.015 = 636.27

TOTAL = \$12093.50



23

88

88

47

00

27

50

Ser. 17.

Cross Sections over borrowed Embankment

Station

L

C

R

822+65

$\frac{-16.4}{31.6}$

$\frac{-21.0}{19.6}$

$\frac{-18.0}{23.0}$

$\frac{-18.0}{34.0}$

+85

$\frac{-19.0}{35.5}$

$\frac{-19.0}{30.0}$

$\frac{-9.1}{12.0}$

$\frac{-6.8}{11.0}$

$\frac{-20.9}{33.0}$

$\frac{-21.2}{38.8}$

823

$\frac{-20.0}{37.0}$

$\frac{-19.9}{34.0}$

$\frac{-15.4}{26.0}$

$\frac{-8.4}{21.0}$

$\frac{-10.9}{36.5}$

$\frac{-22.1}{40.3}$

$\frac{-22.2}{40.3}$

+09

$\frac{-19.0}{35.5}$

$\frac{-14.7}{12.3}$

$\frac{-13.5}{25.0}$

$\frac{-23.4}{38.0}$

$\frac{-23.4}{42.1}$

+30

$\frac{-28.1}{44.7}$

$\frac{-27.2}{17.0}$

$\frac{-21.4}{25.2}$

$\frac{-27.4}{16.0}$

$\frac{-26.8}{30.0}$

$\frac{-27.0}{36.0}$

$\frac{-27.0}{47.5}$

+54 original Surface

$\frac{-30.2}{52.3}$

$\frac{-28.7}{37.0}$

$\frac{-31.7}{10.0}$

$\frac{-30.4}{57.9}$

$\frac{-29.9}{57.9}$

ment

in Fitt Sta 822+65 to 823+54

Areas Cub. Yds.

805.48

430.3

356.46

205.5

383.39

156.6

556.40

735.9

-27.0
475

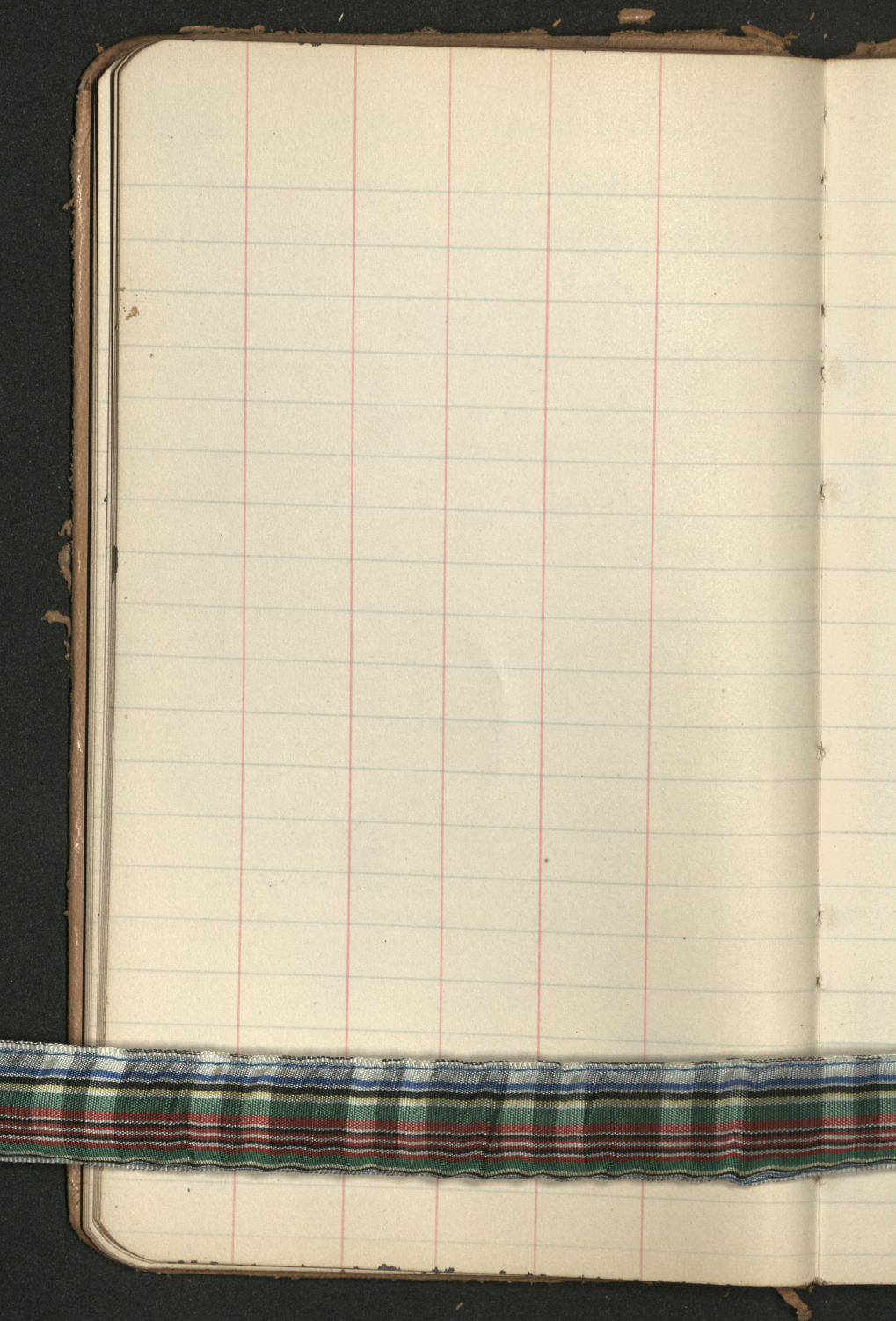
1336.22

1387.6

1785.98

2915.9

4077.9 original Quantity11.62.0 C. H. Bank made from
Borrow.



25



Section 18

Station Grade

L C R

872 3507.09

$\frac{+5.8}{9.5}$ +4.9 $\frac{+3.8}{9.0}$

+05

$\frac{+5.4}{9.4}$ +2.9 $\frac{+1.2}{8.3}$

+45

$\frac{+4.5}{9.1}$ +3.1 $\frac{+1.5}{8.4}$

+55

$\frac{+4.2}{9.1}$ +1.7 $\frac{0.0}{8.0}$

+80

3507.00

$\frac{0.0}{8.0}$ -1.6 $\frac{-3.9}{12.9}$

873

+2.67

$\frac{-2.4}{10.6}$ -4.6 $\frac{-6.9}{17.4}$

+15

$\frac{-3.8}{12.7}$ -4.3 $\frac{-10.5}{22.8}$

+45

$\frac{-11.3}{24.0}$ -14.6 $\frac{-16.7}{32.1}$

+85

$\frac{-2.3}{10.5}$ -4.3 $\frac{-7.4}{18.1}$

874+20 3512.96

$\frac{0.0}{8.0}$ -0.6 $\frac{-1.6}{9.4}$

Areas Cub. Yds
Cut Fill Exc. Emb

83.73

Sta 874 to 874+80 Cur

145.8 Cut yds. Solid Rock

12.6

Have north face

52.07

76.4

51.13

15.3

31.34 00

00

30.37

9.7

9.4

114.0

31.8 =

145.8

472

96.95

62.0

126.38

Sta 874+85 to 874+30

352.2 Emb't 987.6 C.Y.

507.53

made from cuts

446.6

95.44

68.9

00

10.82

1.5

1.3

987.6

1200

Station Grade

L

C

R

874+30 3513.23

$\frac{+18}{85}$

+06

$\frac{00}{80}$

+60

$\frac{+54}{94}$

+43

$\frac{+30}{88}$

+80

$\frac{+28}{87}$

+28

$\frac{+19}{85}$

+90

+2.67

$\frac{00}{80}$

00

$\frac{00}{80}$

875

$\frac{-16}{94}$

-3.7

$\frac{-30}{11.5}$

+45

Box Culvert $1 \times 1\frac{1}{2} \times 50$

+50

$\frac{-132}{268}$

-14.2

$\frac{-156}{30.4}$

876

$\frac{-5.2}{14.8}$

-6.7

$\frac{-7.8}{18.7}$

+40

$\frac{00}{80}$

-1.0

$\frac{-2.4}{10.6}$

876+72.9 3519.75

+75

+3.50

$\frac{+29}{8.7}$

+1.1

$\frac{00}{8.0}$

877

3520.69

$\frac{+34}{89}$

+2.3

$\frac{+06}{82}$

Areas Cub Yds
Cut Fill Exc Emb

12.15 00

1.5 Sta 874+20 to 874+90 Exc
130.6 Cub yds Solid Rock

47.2

72.73

Haul North for

42.8

42.88

7.9

00 00

99.4

31.2 088.6

130.6

10.1

Lumber in Box = 958.

54.77

Sta 874+90 to 876+75

520.1 Emb'd 1283.1 C.Y.

506.92

Made from Cuts

615.4

157.73

129.9

00

17.70

Sta 876+40 to 877+25

90

7.6

Exc 875 C.Y. S.R.

1283.1

20.79

00

Haul North for

26.1

35.67

13.7

48.8

441

Station Grade

877+15 3521.22

+20
8.5

+0.7

0.0
8.0

+25

0.0
8.0

-1.3

-3.6
12.4

+50

-7.0
17.5

-6.9

-10.8
23.2

877+69 3523.11

878

0.0
8.0

-2.5

-3.7
12.6

+20

+3.2
8.8

+2.0

0.0
8.0

+40

+5.6
9.4

+4.8

+2.8
8.7

878+65 3526.24

+80

+6.4
9.6

+5.1

+3.1
8.8

879+05

+5.1
9.4

+2.4

0.0
8.0

+30

+3.2
8.8

+1.9

0.0
8.0

+50

+1.0
8.3

0.0
6.0

-2.5

-5.9
13.9

Areas Capes
Cut Fill Exc Emb

13.78 00

48.8

1.7 32

50.5

00 25.86

37.0 50.

Sta 877+15 to 878+20

87.5

105.8 Emb'd 312.1 Cy.

202.72

Made from Cuts

223.5

00 38.70

7.3 96

29.60 00

342.1

Slip 5.1

39.5

Sta 878 to 879+80 Exc 346.8 Cy.

77.04

Class Slip L Rock = 40.8 Cy.

Slip 22.8

Balance Solid Rock = 356.0 "

120.0

84.92

Haul 190 So far

" 121 N. "

Slip 10.4

59.0

42.48

Slip 2.5

33.0

28.76 00

11.0 11.8

1.00 48.02

0.4

81.9

311.0

S.G.

85.8

396.8

93.7

✓ 94.7

Station Grade

879+80 3529.71

$\frac{00}{80}$

-28

$\frac{14.0}{28.0}$

+85

$\frac{-1.5}{9.3}$

-3.1

$\frac{-14.8}{29.2}$

880+05

$\frac{-4.8}{14.2}$

-98

$\frac{-18.5}{34.8}$

+20

$\frac{-2.3}{10.5}$

-55

$\frac{-14.8}{29.2}$

+50

$\frac{-1.0}{8.5}$

-30

$\frac{-12.4}{25.6}$

+70

+302

$\frac{-1.6}{9.4}$

-5.1

$\frac{-11.4}{24.1}$

881

-

$\frac{-1.9}{9.9}$

-4.5

$\frac{-11.5}{24.3}$

+35

$\frac{-1.1}{8.7}$

-4.2

$\frac{-9.4}{21.1}$

+70

$\frac{-2.0}{10.0}$

-68

$\frac{-13.1}{26.7}$

+90

$\frac{-0.8}{8.2}$

-43

$\frac{-10.0}{22.0}$

882

3536.35

Threads Cubyds
Cut Fill Exc Emb

00 99.40

93.7

20.0

116.73

162.4

321.65

Sta 879 + 30 to 882 + 20

136.3 Emb'd 1409.9 Cy.

169.03

Made from Cuts

148.4

98.05

84.8

130.93

141.5

123.85

289.3

99.33

179.5

177.63

103.8

102.73

47.2

1406.9

✓
1406.9

Station Grade

L

C

R

882+10 3536.63

00
8.0

-1.5

-2.9
11.4

+20

+28
8.7

+1.4

00
8.0

+30

+48
9.2

+3.2

+1.4
8.4

+50

+53
9.3

+3.5

+1.9
8.5

+85

+50
9.3

+3.7

+2.0
8.5

+90

+43
9.1

+2.0

00
8.0

883+05

+2.84

00
8.0

-2.1

-7.4
18.1

+15

-2.1
10.2

-4.7

-8.8
20.2

+25

00
8.0

-1.3

-5.0
14.5

+35 3540.18

+3.5
8.9

+1.4

00
8.0

Areas Emb
Cut Fill Exc Emb

00 24.70

2.8 3.0

1409.9

22.89 00

14.0 Sta 882+10 to 883+05

52.96

Exp 200.8 Cy. Solid Rock

41.8

Have 102.1 so far

" 56 from 882+80 to 881+65 = 60.4 do Hand

59.95

78.4

60.93

8.8

34.30 00

6.3

9.9

00 53.31

152.1

48.7 56

200.8

Sta 882+90 to 883+35

30.2 Emb 70.3 Cy. made
from Cuts.

109.59

26.2

00 32.13

3.2

4.0

25.83 00

70.3

14.2

17.4

Station Grade

L

C

R

883+45 3540.47

$\begin{array}{r} +3.9 \\ 9.0 \end{array}$

+3.1

$\begin{array}{r} +2.1 \\ 8.5 \end{array}$

+70

+2.84

$\begin{array}{r} +5.3 \\ 9.3 \end{array}$

+3.0

$\begin{array}{r} 00 \\ 80 \end{array}$

883+939 3541.85

884

$\begin{array}{r} +12.0 \\ 11.0 \end{array}$

+7.7

$\begin{array}{r} +5.2 \\ 9.3 \end{array}$

+25

+3.07

$\begin{array}{r} +12.9 \\ 11.2 \end{array}$

+11.7

$\begin{array}{r} +10.0 \\ 10.5 \end{array}$

+40

$\begin{array}{r} +13.7 \\ 11.4 \end{array}$

+11.7

$\begin{array}{r} +9.6 \\ 10.4 \end{array}$

+90

$\begin{array}{r} +9.1 \\ 10.3 \end{array}$

+5.8

$\begin{array}{r} +3.3 \\ 8.8 \end{array}$

884+899 3544.80

885+15

$\begin{array}{r} +5.8 \\ 9.5 \end{array}$

+2.6

$\begin{array}{r} 00 \\ 80 \end{array}$

+35

$\begin{array}{r} 00 \\ 80 \end{array}$

-2.0

$\begin{array}{r} -3.6 \\ 12.4 \end{array}$

+40

+3.32

$\begin{array}{r} 00 \\ 80 \end{array}$

-1.2

$\begin{array}{r} -2.1 \\ 10.2 \end{array}$

+50

$\begin{array}{r} +1.1 \\ 8.3 \end{array}$

+0.6

$\begin{array}{r} 00 \\ 80 \end{array}$

885+52 3546.86

Areas Cuyds

Cut Fill Exc. Emb

51.13

17.4

Sta 883+25 to 885+35 Exc

45.5 950.6 Cuyds. Class

47.15

Slips Loose Rock = 269 Cy.

Balance Solid = 924.6

107.8

146.96

Have 49.8 So. free

" 10.0 N "

slip 3.7

" 294. from 884+58 to 885 = 750

169.2

" 516 " 884+65 to 885+50 = 1990

Total Have 2940

218.55

slip 3.9

122.0

220.73

slip 9.5

300.6

104.99

slip 8.9

70.0

45.95 00

11.3

8.1

Sta 885+15 to 885+50

00 33.00

869.8

80.8 = 0756

Emb 15.2 Cy. made

950.6

4.8

from Cut So.

00 18.27

11

2.3

9.29 00

18.4

15.2

19.5

✓

Station Grade

L C R

885+65 3547.26

+40
90

+40

+16
8.4

886

+2.99

+4.7
92

+32

+16
8.4

+25

+31
88

+16

00
80

886+42 03549.55

+45

00
80

-1.4

-6.1
76.2

+65

-6.4
76.6

-8.1

-12.7
26.1

+95

00
80

-0.3

-12.4
25.6

887

+1.9
8.5

00

-11.7
24.6

+20

+2.68

+4.4
9.1

+0.9

00
80

+55

+15.4
11.9

+10.6

+7.7
9.9

+75 3553.12

+13.8
11.5

+10.6

+7.9
10.0

Areas
Cut Fill Exc. Emb

57.20

19.5

Sta 885+40 to 886+45 Exc

71.7

186.0 Cu. Solid Rock.

53.36

Haul north from

36.7

25.84

00

4.8

7.1

00

38.29

132.7

53.3

56

Sta 886+25 to 887+20

186.0

103.0 Embk't 288.6 Cu.

239.79

made from Cuts

160.1

00

48.44

0.5

8.3

7.60

40.95

12.2

10.1

25.30

00

288.6

151.2

Sta 886+95 to 888+15 Exc 511.6 Cu. S.R.

207.94

Haul 56 to from

151.4

" 306.2 N "

" 100 from 87+40 to 88+40 = 100 Haul

200.75

145.4

460.7

Station	Grade	L	C	R
888+10	3554.05	$\frac{+4.0}{9.0}$	+0.9	$\frac{0.0}{8.0}$

+15		$\frac{0.0}{8.0}$	-1.6	$\frac{-5.7}{15.6}$
-----	--	-------------------	------	---------------------

+60	512+60	$\frac{-13.7}{27.6}$	$\frac{-2.00}{10.0}$	$\frac{-29.7}{51.6}$
-----	--------	----------------------	----------------------	----------------------

+85		$\frac{-7.6}{18.4}$	-7.5	$\frac{-9.5}{21.3}$
-----	--	---------------------	------	---------------------

889+20		$\frac{0.0}{8.0}$	0.0	$\frac{0.0}{8.0}$
--------	--	-------------------	-----	-------------------

889+20.9	3557.02			
----------	---------	--	--	--

+65		$\frac{+6.8}{9.7}$	+5.9	$\frac{+3.5}{8.9}$
-----	--	--------------------	------	--------------------

890		$\frac{+7.8}{10.0}$	+4.4	$\frac{+1.2}{8.3}$
-----	--	---------------------	------	--------------------

890+10.9	3559.71			
----------	---------	--	--	--

+40		$\frac{+10.0}{10.5}$	+5.4	$\frac{+2.3}{8.6}$
-----	--	----------------------	------	--------------------

+85		$\frac{+8.6}{10.2}$	+5.3	$\frac{+2.1}{8.5}$
-----	--	---------------------	------	--------------------

891+10	3562.89	$\frac{+2.9}{8.7}$	+1.4	$\frac{0.0}{8.0}$
--------	---------	--------------------	------	-------------------

Areas	Cub yds
Cut	Fill Exc Emb
23.65	00

460.7

00

38.83

462.2

49.4 = 0.854

511.6

1.5 2.4 Sta 888 + 10% 889.20

Embkk 1547.1 C.Y.

855.5 Made from Cuts

987.72

553.9

208.73

135.3

00

00

1547.1

80.4 Sta 889 + 20% 892 + 85

96.47

Exc 1074.8 Cuyds. Class

Slips To Rock = 40.8 C.Y.

111.9

Balance Solid R = 1034.0

76.26

Haul 89.0 So far

131.1

" 136.5 X "

" 680. from 890 + 70% 893 + 30

= 1770 Yds Haul

100.77

Slip 89

161.0

92.36

Slip 4.9

53.5

23.29

Slip 4.5

90.3

646.5

Station Grade

891+55 3564.35

$$\begin{array}{r} L \quad C \quad R \\ +71 \\ 98 \quad +5.0 \quad +2.6 \\ \hline \end{array}$$

+85

$$\begin{array}{r} +51 \\ 9.4 \quad +2.8 \quad 00 \\ \hline 80 \end{array}$$

892

$$\begin{array}{r} +72 \\ 9.8 \quad +3.6 \quad +1.2 \\ \hline 8.3 \end{array}$$

+35

$$\begin{array}{r} +53 \\ 9.3 \quad +2.1 \quad 00 \\ \hline 8.0 \end{array}$$

+60

+3.21

$$\begin{array}{r} +48 \\ 9.2 \quad +2.8 \quad +1.5 \\ \hline 8.4 \end{array}$$

+70

508+1.0

$$\begin{array}{r} +38 \\ 9.0 \quad +2.2 \quad 00 \\ \hline 8.0 \end{array}$$

+85

$$\begin{array}{r} 00 \\ 80 \quad -1.6 \quad -35 \\ \hline 12.3 \end{array}$$

893+20

$$\begin{array}{r} -185 \\ 348 \quad -13.8 \quad -18.9 \\ \hline 35.4 \end{array}$$

+50

$$\begin{array}{r} -153 \\ 30.0 \quad -23.0 \quad -27.0 \quad -23.2 \\ \hline 41.8 \end{array}$$

+75 3571.41

$$\begin{array}{r} -163 \\ 24.0 \quad -15.3 \quad -19.5 \\ \hline 36.3 \end{array}$$

Areas	Cub Yds
Cut	Fill Exc Emb
85.05	646.5

slip 5.1
73.5

47.16

slip 2.6
31.5

66.18

slip 8.7
68.4

39.37

slip 5.4
41.3

49.84

slip 0.7
15.5

33.90 00

63 53

00

28.49

905.5

169.3 =

0859

1094.8

Sta 892+70 to 894+80

417.4 Emb 2895.3 Cut Yds.

615.28

2728.6 yds made
from cuts, Balance

920.0

Barred Lo Rock 1667.4

1040.65

745.3

569.09

637.0

Measured Pit on R
15x30x100

2725.0

Station Grade

894+20 3572.85

894+40 3573.48

+55

+80

895

+36 3576.32

+75

+85

896

+45 3580.79

+80

897 3580.79

L C R
 $\frac{-59}{15.9}$ -70 $\frac{-108}{23.2}$

$\frac{00}{80}$ -2.1 $\frac{-59}{15.9}$

$\frac{+40}{90}$ +20 $\frac{00}{80}$

$\frac{+40}{90}$ +1.5 $\frac{00}{80}$

$\frac{+35}{89}$ +49 $\frac{+58}{95}$

$\frac{+08}{82}$ +10.5 $\frac{00}{80}$

$\frac{00}{80}$ -0.8 $\frac{-19}{99}$

$\frac{-1.8}{9.7}$ -3.0 $\frac{-51}{14.7}$

$\frac{-86}{199}$ -9.0 $\frac{-122}{25.3}$

$\frac{-36}{12.4}$ -5.6 $\frac{-94}{21.1}$

Areas Cub Yds
Cut Fill Exc. Emb
195.30

156.2

00 45.74

slip 2.3
10.2 14.1

33.00 00

2895.3

slip 3.9 Sta 894+55 to 895+85 Exc
22.9 212.3 Cuts.

28.75

Class Matl in original Section
3/4 Lo. Rock = 64.1

slip 8.5 class Slips LoR = 19.6

74.0 Balance of cut Solid Rock

82.28

Total f. Rock = 83.7 Cuts.

slip 4.9

" Solid " = 128.6 " "

64.1 Haul 1/2 each way for

7.25 00

0.9

1.7 Sta 895+75 to 897+25

00 1381

192.3

20.0

212.3

Embark 652.5 C.Y.

20.7 made from cuts

60.75

280.8

276.20

269.3

139.30

74.6

64.71

Station Grade

L C R

897+05 3580.94

$\frac{00}{8.0}$ -1.3 -2.7
11.1

+25

$\frac{+28}{8.7}$ +1.3 $\frac{00}{8.0}$

+75

$\frac{+63}{9.6}$ +4.5 $\frac{+33}{8.8}$

898+10

+3.02

$\frac{+39}{9.0}$ +1.7 $\frac{00}{8.0}$

+50

$\frac{+06}{8.2}$ $\frac{00}{5.0}$ -1.7 -7.8
18.7

898+56 3585.50

+70

$\frac{00}{8.0}$ -3.3 $\frac{-10.3}{22.5}$

+80

+3.25

$\frac{-08}{8.2}$ -3.5 $\frac{-11.2}{23.8}$

899+15

$\frac{-38}{12.7}$ -8.8 $\frac{-16.6}{21.0}$ -15.8
30.7

899+52 3588.62

+60

+3.50

$\frac{-71}{17.7}$ $\frac{13.0}{6.0}$ -12.8 $\frac{-88}{20.2}$

900

3590.30

$\frac{-91}{20.7}$ $\frac{-108}{10.0}$ $\frac{-110}{4.0}$ -6.3 -4.1
13.2

Areas Cubyds

Cut Fill Exc Emb

00 21.86

647.1

5.4 5.4

22.05 00

652.5

slip

6.3

Sta 897+05 to 898+70

94.3

Exc 233.5 Cub yds.

79.80

Class Slips To Rock 17.3 Cu.

Balance Solid 216.2

slip

7.5

71.2

Haul 1/2 Each way free

30.05 00

slip

3.5

22.9

23.4

090 47.44

0.7

49.6

0.0 86.38

211.3

22.2

233.5 = 0354.

Sta 898+10 to 900+44

34.1

Emb'd 1409.0 Cu.

98.00

Made from Cuts.

261.7

305.79

519.1

317.08

383.1

200.06

85.7

1351.7

Station Grade

L C R

900+15 3590.52

$\frac{-8.5}{19.8}$ $\frac{-5.8}{8.0}$ -48 $\frac{-2.1}{11.1}$

+40 $\frac{0.6}{+3.50}$

$\frac{-0.3}{7.5}$ -04 $\frac{0.0}{8.0}$

+44⁰ 3591.80

$\frac{0.0}{8.0}$ +0.8 $\frac{+1.5}{8.4}$

+70 $\frac{0.3}{+3.30}$

$\frac{+6.1}{9.5}$ +83 $\frac{+7.8}{10.0}$

901+16

$\frac{+9.1}{10.4}$ +11.0 $\frac{+10.1}{10.5}$

901+40 3594.96

$\frac{+11.8}{11.0}$ +11.5 $\frac{+10.1}{10.5}$

901+50

$\frac{+9.8}{10.5}$ +8.5 $\frac{+7.2}{9.8}$

902

+30 $\frac{0.0}{+3.00}$

$\frac{+7.9}{10.0}$ +5.7 $\frac{+4.4}{9.1}$

+50

$\frac{+8.6}{10.2}$ +6.9 $\frac{+5.3}{9.3}$

903 3599.76

$\frac{+8.4}{10.1}$ +7.3 $\frac{+6.2}{9.6}$

Areas	Cub yds
Cut	Fill Exc Emb
108.46	1351.7

52.1

00 4.15

0.6 0.2

12.56

00

1409.0

Slip 15.0
71.8

Sta 900 + 40% 904 + 80

136.52

Exc. 2339.0 Cub. Yds.

Slip 42.6

286.8

Class Slip. Loose Rock = 192.0 @ 4

Balance Cut. Filled " = 2147.0 "

200.20

Slip 31.5

259.1

Haul 115.2 to fill

211.23

" 700. from 901 + 256899 + 45 = 1260

" 225. " 901 + 80 + 896 + 50 = 1195

Slip 41.6

338.4

" 855. " 902 + 75 + 893 + 75 = 7695

" 189. " 904 + 20 + 906 = 340

10490

154.28

Slip 9.9

143.3

103.64

Slip 1.5

83.9

122.88

Slip 3.4

234.4

130.31

Slip 181.0
10.7

1755.5

Station Grade

903+50 3601.26

+4.9
9.2

+4.0

+2.5
8.6

904

+3.00

3602.76

+6.4
9.6

+5.2

+4.0
9.0

+35

+5.2
9.3

+3.5

+2.1
8.5

+65

+3.0
8.8

+1.5

0.0
8.0

+80

0.0
8.0

-1.7

-3.3
12.0

+85

0.0
8.0

-0.7

-2.4
10.6

905

+2.32

3604.20

+2.8
8.7

+0.9

0.0 - 0.3
6.5 7.5

+65

3605.5

0.0
8.0

-1.5

-6.1
16.2

906

-4.5
13.8

-5.6

-8.0
13.0

-7.1
17.7

907

3609.72

-2.1
10.2

-2.5

-3.4
12.1



meas Cub yds
Cut Fill Exc Emb

6520

1755.5

Slip 20.0
143.7

89.96

Slip 12.6
97.4

60.35

Slip 3.2
47.2

2460 00

46 5.3

00 28.55 2084.2
254.8 54.

✓339.0

4.0

00 14.91

Sta 904+85 to 905+65

3.3 4.2 Exc 39.0 Cub yds

18.05 0.08

class 1/2 L.R. = 19.504

1/2 Solid R = 19.50 ✓

14.5 47.6 haul on side from

00 39.50 17.8
21.2 54.

39.0 116.5

140.29

347.1

47.13

161.7

686.4

✓
C.H.H.

Station Grade

L

C

R

907+80 3611.58

$\frac{-28}{11.2}$

-3.2

$\frac{-39}{12.9}$

908 3612.04

908+15

$\frac{-5.7}{15.6}$

-7.2

$\frac{-9.1}{20.7}$

+20

Box Culvert 2x3x36

+50

$\frac{-3.1}{12.6}$

-4.8

$\frac{-6.6}{16.9}$

+90

$\frac{-5.7}{15.6}$

-7.6

$\frac{-9.1}{20.7}$

909+10

$\frac{-7.5}{18.3}$

-6.8

$\frac{-5.9}{15.9}$

+50

$\frac{-1.6}{9.4}$

-2.0

$\frac{-2.7}{11.1}$

+75

$\frac{-2.1}{10.2}$

-3.1

$\frac{-5.5}{15.3}$

+90

$\frac{-3.1}{11.7}$

$\frac{-6.1}{2.0}$ -5.6

$\frac{-4.6}{13.9}$

910+25

$\frac{-3.6}{12.4}$

-2.2

$\frac{-2.0}{10.0}$

+70 3621.49

$\frac{-4.0}{13.0}$

$\frac{-6.0}{8.0}$

-0.5

$\frac{0.0}{8.0}$

Areas Cub. yds.
Cut F. 11 Exc Emb

62.01

686.4

Lumber in Box = 1190' 137

158.5

182.48

Sta 904 + 65 to 911 + 70

187.5 Embk't 1832.6 Cu yds

106.85

692.6 Cu yds. made

219.7 from Cuts. balance
1140.0

189.74

less 5% 57.0
Borrow Earth 1083.0 Cu.

130.7

163.18

147.2

35.55

47.1

66.13

47.3

104.05

96.1

44.24

71.0

41.00

26.1

1817.6

Between Stations 906 + 40 to 909 + 30
Bank was made from Borrow

Station Grade

L

C

R

911

3622.54

-3.0
11.5

0.0
3.0

00

0.0
8.0

490 + 20

+55

+3.50

-2.1
10.1

00

+11
8.3

+70

0.0
8.0

+11

+15
8.4

912

3626.04

3526.04

+2.6
8.7

+26

+2.6
8.7

913

+5.3
9.3

+5.2

+5.1
9.3

+50

+6.1
9.5

+5.7

+5.5
9.4

+95

+3.21

+2.1
8.5

+1.0

0.0
8.0

914+15

487+0.5

0.0
8.0

-1.1

-2.1
10.2

914+72

HB

-7.5
18.3

-7.1
7.0

-7.8

-8.3
7.0

-9.1
20.7

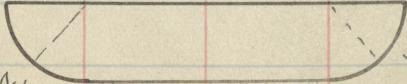
914+90

Toe

91/4
13.8

-12.0

-10.7
16.3



Areas Cubyds.

Cut Fill Exc Emb

1817.6

00 600

3.0 136

4.40 7.35

5.4 1.4

15.02 00

1832.6

32.5 Sta 911 to 914 + 15' Exc 565.5

43.42

class $\frac{1}{2}$ Earth = 2828 cu. $\frac{1}{2}$ Lo Rock = 282.7 "

247.0

89.96

Have 255 So far

" 120 N "

176.1 " 280 from 912 + 50 to 909 + 90 = 728

" 140 " 913 + 35 " 914 + 65 = 182

100.26

Total Haul = 910

97.4

16.65 00

41

4.3

Sta 913 + 95 to 914 + 90

00

17.36 565.5

Emb't 317.0 made

241.0 from Cut So.

210.96

717

317.0

✓

Station Grade

L

C

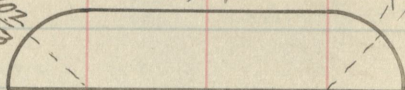
R

915+04 Toe

$-\frac{102}{153}$

-12.0

$-\frac{108}{162}$



915+22 H/B

$-\frac{89}{204}$

-7.9

$-\frac{61}{162}$

915+60

$-\frac{33}{12.0}$

0.0

$\frac{0.0}{8.0}$

+80

$\frac{0.0}{8.0}$

+0.2

$+\frac{0.4}{8.1}$

916

+3.21

+76+20

$+\frac{1.2}{8.3}$

+0.9

$+\frac{0.9}{8.2}$

+40

$+\frac{1.6}{8.4}$

+1.5

$+\frac{1.4}{8.4}$

+65

$+\frac{0.6}{8.2}$

+0.3

$\frac{0.0}{8.0}$

+75

$\frac{0.0}{8.0}$

-0.4

$-\frac{0.8}{8.2}$

917+45

$-\frac{2.3}{10.5}$

-3.0

$-\frac{3.2}{11.8}$

+65 3644.18

$\frac{0.0}{8.0}$

$+\frac{0.5}{4.5}$

$\frac{0.0}{2.0}$

-0.6

$-\frac{1.8}{9.7}$

Areas Cub. Yds

Cut Fill Exc. Emb

19707

915+04 to 915+80

69.0 Emb'd 218.7 Cuy.

31.3 made from cut

North balance 187.4

less 5%

9.4

146.8

Borrow Earth

178.0 Cuy.

00 11.55

0.8 2.9

3.21 00

218.7

7.1

Sta 915+60 to 918

15.83

Exc 53.1 Cuy. Lo Rock

30.0

Have 1/2 Each way for

24.60

13.6

4.83 00

0.6

0.8

Sta 916+65 to 918+35

00 6.04

52.1

Emb'd 107.9 Cuy.

46.1 made from cuts at

00 52.70

Ends

0.4

23.1

1.50 9.81

0.6

7.3

1.0

107.3

✓

Station	Grade	L	C	R
918	3645.31	$\frac{0.0}{8.0}$	00	$\frac{-0.4}{7.6}$

+35		$\frac{0.0}{8.0}$	00	$\frac{0.0}{8.0}$
-----	--	-------------------	----	-------------------

+85		$\frac{+3.0}{8.8}$	+2.9	$\frac{+2.4}{8.6}$
-----	--	--------------------	------	--------------------

919+10	+3.21	$\frac{+1.8}{8.5}$	+0.8	$\frac{0.0}{8.0}$
--------	-------	--------------------	------	-------------------

+20		$\frac{0.0}{8.0}$	-0.6	$\frac{-1.0}{8.5}$
-----	--	-------------------	------	--------------------

919+22	3649.22			
--------	---------	--	--	--

+35		$\frac{-3.0}{7.5}$	-3.5	$\frac{-3.7}{12.6}$
-----	--	--------------------	------	---------------------

+70		$\frac{0.0}{8.0}$	-0.3	$\frac{-0.5}{7.8}$
-----	--	-------------------	------	--------------------

+75	+3.04	$\frac{+0.5}{8.1}$	0.0	$\frac{0.0}{8.0}$
-----	-------	--------------------	-----	-------------------

920		$\frac{+2.2}{8.6}$	+1.6	$\frac{+0.6}{8.2}$
-----	--	--------------------	------	--------------------

+35	3652.65	$\frac{+1.0}{8.3}$	+0.5	$\frac{0.0}{8.0}$
-----	---------	--------------------	------	-------------------

Areas Cub. yds.
Cut Fill Exc Emb

00 1.40

107.3

0.6

00 00

107.9

43.3

918+35 to 919+20 Exp

131 Cub. yds.

46.83

Class $\frac{1}{2}$ Lo. R. = 36.6 Cy.

$\frac{1}{2}$ S. R. = 36.5 "

28.1

13.80 00

Have 63.1 So. from

" 10.0 N. "

1.7

1.0

00 8.45

73.1

Sta 919+10 to 919+75

20.6

Emb 67.0 Cy.

33.0 made from Cuts

Balance 34.0

less 5% 1.7

45.2

Borrow Ea. 32.3 Cy.

65.62

00 4.12

0.1

0.2

Sta 919+70 to 920+50

2.00 00

67.0

Exp 35.1 Cy. Lo Rock

12.3

Have $\frac{1}{2}$ Each way free

24.64

21.2

8.07 00

1.5

2.1

35.1

✓
v. aff.

Station Grade

L

C

R

920+50 3653.11

$\frac{00}{80}$

-0.6

$\frac{-1.8}{9.7}$

+70

$\frac{-2.5}{10.8}$

-3.0

$\frac{-2.8}{11.2}$

+95

$\frac{00}{80}$

00

$\frac{00}{80}$

921

$\frac{+0.4}{8.1}$

+0.8

$\frac{00}{80}$

+50

$\frac{+1.1}{8.3}$

+1.0

$\frac{+0.5}{8.1}$

+60

+3.04

$\frac{+0.8}{8.2}$

+0.5

$\frac{00}{80}$

+75

$\frac{00}{80}$

-0.7

$\frac{-1.4}{9.4}$

922

$\frac{-0.3}{7.5}$

-1.3

$\frac{-1.7}{9.6}$

+40

$\frac{-0.8}{8.2}$

-3.7

$\frac{-6.3}{16.5}$

+55

3657.39

$\frac{-3.2}{11.8}$

-5.4

$\frac{-7.0}{17.5}$

Hrcas Emb

Cut Fill Exc Emb

00 11.61

2.1 Sta 920+35 to 920+55
Embrt #9.4 C.Y.

23.4 made from Cuts.

51.55

23.9

00 00

49.4

0.7 Sta 920+95 to 921+75 Exc
27.0 Cuts. Solid Rock

8.04

21.0 Haul So. from

14.60

4.0

7.25 00

1.3 2.2

00 11.69

27.0

Sta 921+60 to 923+05

13.8 Embrt. 296.9 C.Y.

18.12

made from Cuts N

65.7

70.54

51.5

114.81

112.9

246.1

✓ 95.1

Station Grade

L

C

R

922+80 3660.15

$\frac{-6.4}{16.6}$

-6.6

$\frac{-3.4}{12.1}$

923

2784.20

$\frac{-1.5}{9.3}$

-0.2

$\frac{0.0}{8.0}$

+05

$\frac{0.0}{8.0}$

+03

$\frac{+0.4}{8.1}$

+50

$\frac{+2.4}{8.6}$

+2.0

$\frac{+1.2}{8.4}$

+85

$\frac{+2.0}{8.5}$

+23

$\frac{+2.5}{8.6}$

924

+3.04

$\frac{0.0}{8.0}$

00

$\frac{0.0}{8.0}$

+10

$\frac{-3.2}{11.8}$

-4.0

$\frac{-4.5}{13.8}$

+20

$\frac{-1.5}{24.3}$

-16.1

$\frac{-18.6}{32.0}$

$\frac{-17.6}{33.4}$

+45

$\frac{-12.3}{25.5}$

-15.9

$\frac{2.16}{36.0}$

$\frac{-19.3}{36.0}$

+55 3665.47

$\frac{-20.8}{38.2}$

$\frac{-11.4}{19.0}$

-9.3

$\frac{-9.8}{5.0}$

$\frac{-16.0}{11.0}$

$\frac{-14.2}{28.3}$

Areas Cub yds
Cut Fill Exc Emb

129.01

246.1

50.4

00

6.98

0.2 0.4

4.02

00

296.9

31.2 Sta 923 to 924 Exc

33.40

116.4 Cuyds. S. Rock

46.0 Haul $\frac{1}{2}$ Each way for

37.66

10.5

00

00

87.9
28.50 $\frac{1}{2}$ S.G.

116.4

14.5 Sta 924 to 925 + 15

78.15

Emb. 1539.6 Cuy.

122.6 made from cuts
North

584.09

567.1

640.93

195.8

416.44

393.1

1293.1



444

Section 18

Station Grade L C R
 924+85 3666.38 $\frac{-15.8}{30.7}$ $\frac{-9.3}{15.0}$ -8.1 $\frac{-12.8}{26.2}$

925+15 3667.29 $\frac{-5.2}{14.8}$ -6.1 $\frac{-8.4}{19.6}$

Ditches

Station	to Station	Size	Cubic Yds.		
			EA	LoR	SR
910+60	912+65	Surf on L			
910+60 = 0	0.0	area			cu. yds.
+10	1.5 x 10	15.00			28
+35	1.8 x 10	21.60			16.9
+60	3.3 x 11	36.30			26.8
+85	3.8 x 10.5	39.90			35.3
1+10	2.0 x 10	20.00			27.7
+35	3.4 x 10	34.00			25.0
+55	3.0 x 9	27.00			22.6
+65	0.0	0.0			50
					162.1

912+25 914+65 Surf on L 1 x 5 x 240 44.4

911+30 914+45 Side D. R & L 37.0

918+30 919+20 " " L 6.7

919+70 920+50 " " " 5.9

920+90 921+75 " " " 6.3

915+30 921+20 Surf " L $\left\{ \begin{array}{l} 1.0 \times 4.0 \times 380 \\ 1.0 \times 5.0 \times 210 \end{array} \right\}$ 95.3

Channel 710.7

917.2 132.3 18.9

910 to 912+50 Clear for Ditch
 30' x 250' = 0.8 Acres

Areas Cub Yds.

Cut Fill Exc. Emb

1293.1

291.21

246.5

152.52

1539.6

Channel 900' L Sta 923

Yds.
SR

Stations L R Areas Cu. Yds.

0	0.0	0.0	0.0	
				17.9
+50	0.0	$\frac{+1.8}{10}$	$\frac{+1.8}{11.0}$	$\frac{0.0}{11.5}$
				19.35
		$\frac{+2.3}{3.0}$	$\frac{+2.3}{12.0}$	$\frac{0.0}{14.0}$
1	0.0			26.45
				42.4
		$\frac{+3.4}{3.0}$	$\frac{+3.4}{11.4}$	$\frac{0.0}{14.0}$
+50	0.0			38.63
				60.3
		$\frac{+4.3}{4.0}$	$\frac{+3.7}{14.0}$	$\frac{0.0}{16.0}$
2	0.0			52.30
				84.2
		$\frac{+4.1}{4.5}$	$\frac{+3.7}{14.5}$	$\frac{0.0}{17.0}$
+50	0.0			52.85
				97.4
		$\frac{+4.6}{4.0}$	$\frac{+4.5}{13.0}$	$\frac{0.0}{17.0}$
3	0.0			59.15
				103.7
		$\frac{+5.4}{2.4}$	$\frac{+3.7}{12.4}$	$\frac{0.0}{17.0}$
+50	0.0			60.49
				108.3
		$\frac{+4.8}{4.0}$	$\frac{+4.1}{10.0}$	$\frac{3.0}{14.0}$
4	0.0			56.50
				60.9
		$\frac{+5.0}{2.7}$	$\frac{+4.3}{10.0}$	$\frac{+2.9}{14.0}$
+28	0.0			60.90
				24.8
+50	0.0			0.0

907+75 Borrow for Dyke on L

0 = 0.0

+07 = 2.6 x 8

+25 = 2.3 x 9

+44 = 0.0

} Borrow 23.8 Cu. Earth

710.1

18.9

SECTION 18

PAGE	Acres	Excavation ~ Cub. Yds.				Total Embankment Cu. Yds	C. Ba from
		Total in Cuts	Earth	Loose Rock	Solid Rock		
26		145.8 ✓			145.8 ✓	987.6 ✓	
27		130.6 ✓			130.6 ✓	1283.1 ✓	
27		87.5 ✓			87.5 ✓		
28		396.8 ✓		40.8 ✓	356.0 ✓	342.1 ✓	
29		200.8 ✓			200.8 ✓	1409.9 ✓	
30		950.6 ✓		26.0 ✓	924.6 ✓	703 ✓	
31		186.0 ✓			186.0 ✓	15.2 ✓	
32		511.6 ✓			511.6 ✓	288.6 ✓	
33		1074.8 ✓		40.8 ✓	1034.0 ✓	1547.1 ✓	
34		212.3 ✓		83.7 ✓	128.6 ✓	2895.3 ✓	
35		233.5 ✓		17.3 ✓	216.2 ✓	652.5 ✓	
36		2339.0 ✓		192.0 ✓	2147.0 ✓	1409.0 ✓	
37		39.0 ✓		19.5 ✓	19.5 ✓		
38		565.5 ✓	282.8 ✓	282.7 ✓		1832.6 ✓	
39		53.1 ✓		53.1 ✓		317.0 ✓	
40						218.7 ✓	
41		73.1 ✓		36.6 ✓	36.5 ✓	107.9 ✓	
42		35.1 ✓		35.1 ✓		67.0 ✓	
43		27.0 ✓			27.0 ✓	49.4 ✓	
44		116.4 ✓			116.4 ✓	296.9 ✓	
45	0.18 ✓	1068.4 ✓	917.2 ✓	132.3 ✓	18.9 ✓	1539.6 ✓	
						23.8 ✓	
0.18 ✓		8446.9 ✓	1200.0 ✓	959.9 ✓	6287.0 ✓	15353.6 ✓	

Summary

ment Yds	Cub.Yds. Bank made from Cuts	Cu.Yds Shrinkage deducted	Cu.Yds.-Borrow Earth	Loose Rock	Cu.Yds. Hauled 100'	F.R.M. Lumber in Culverts
87.6	987.6					
83.1	1283.1					958
42.1	342.1					
09.9	1409.9					
70.3	703				60.	
15.2	152				2740.	
8.6	288.6				100.	
7.1	1547.1				1770.	
5.3	2728.6			166.7		
2.5	652.5					
9.0	1409.0				10490	
2.6	692.6	57.0	1083.0			1190
7.0	317.0				910	
8.7	31.3	9.4	178.0			
7.9	1079					
7.0	33.0	1.7	32.3			
9.4	49.4					
6.9	2969					
9.6	1539.6					
3.8			23.8			
6	13801.7	68.1	1317.1	166.7	16070.	2148.

SECTION 18.COST.

CLEARING 0.18 ACRES	@	\$ 35 ⁰⁰	=	\$ 6.30
EXCAVATION, EARTH 1200. CU. YDS	@	0.14	=	168.00
" , L. ROCK 959.9	" " "	0.32	=	307.17
" , S. ROCK 6287.0	" " "	0.80	=	5029.60
BORROW, EARTH 1317.1	" " "	0.12	=	158.05
" , L. ROCK 166.7	" " "	0.30	=	50.01
HAUL, 100 FT., 16070	" " "	0.015	=	241.05
LUMBER, FT. B.M. 2148	@	\$ 12 ⁰⁰	=	25.78
TOTAL =				\$ 5985.96

T.#
6.30

68.00

07.17

29.60

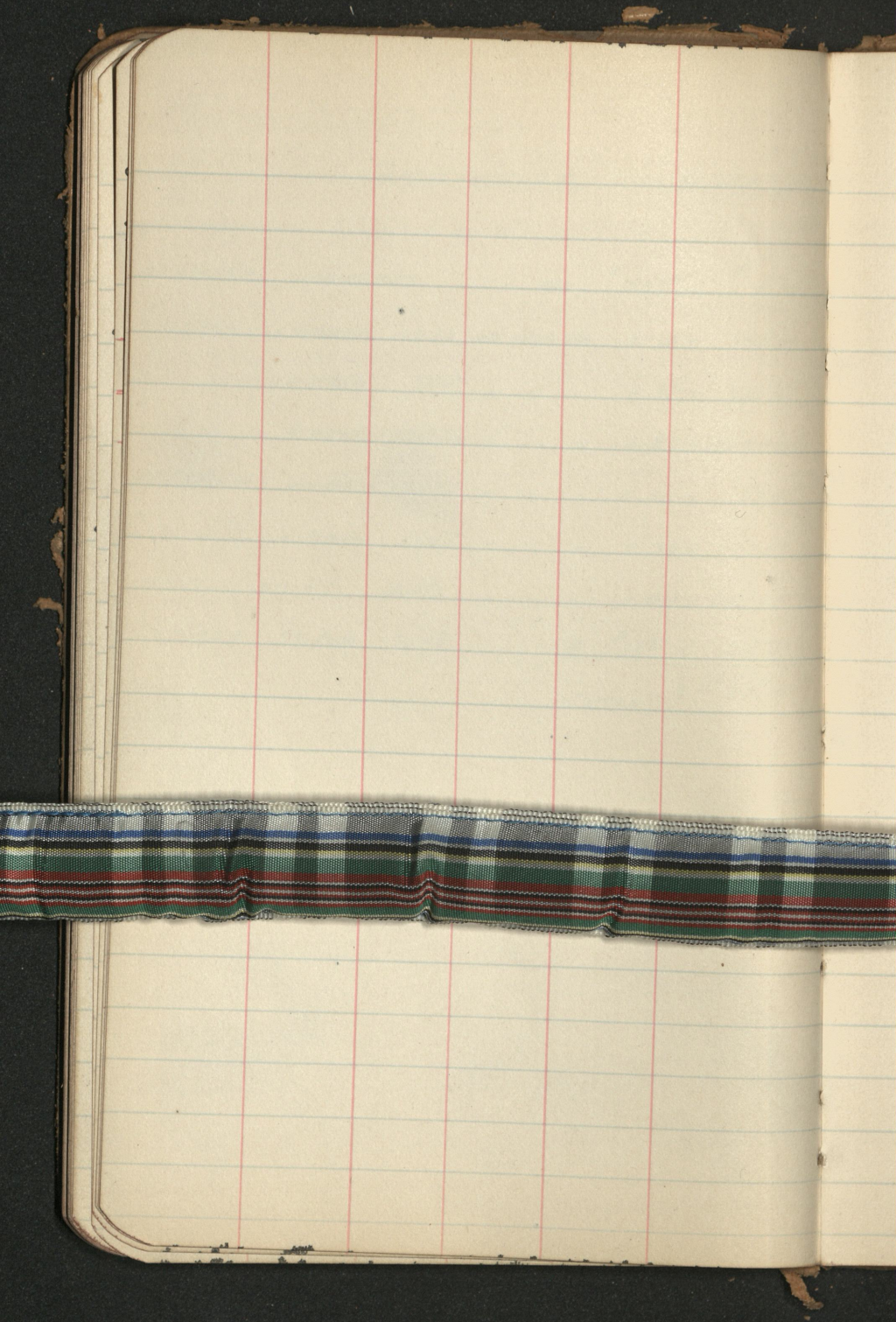
58.05

0.01

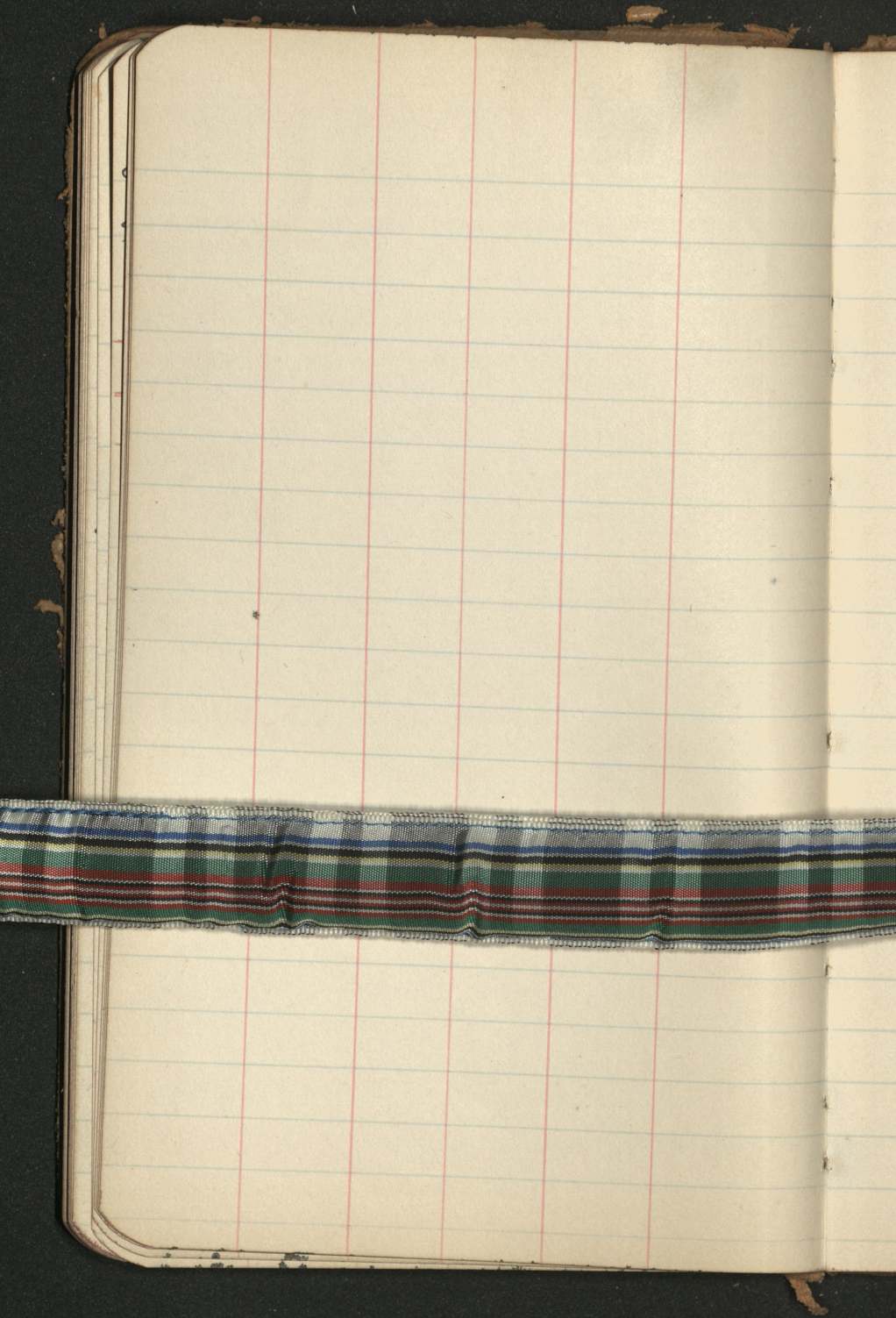
1.05

5.78

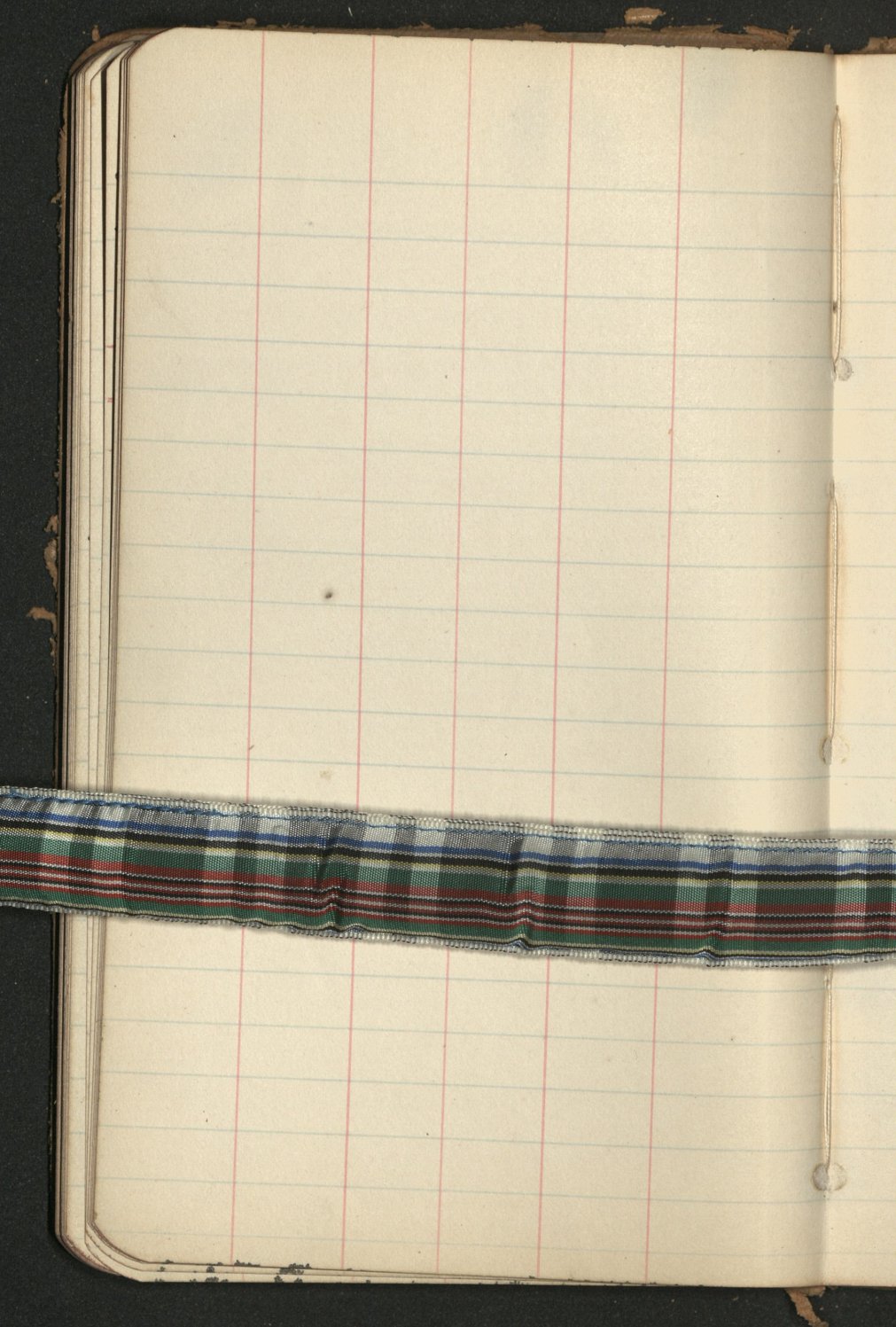
5.96













Section 19

Station Grade

L C R

925+15 3667.29

$\frac{-52}{14.8}$ -6.1 $\frac{-84}{19.6}$

+50

+30.4

$\frac{-52}{14.8}$ -4.8 $\frac{-46}{13.9}$

926 3669.87

$\frac{-17}{9.6}$ -2.3 $\frac{-3.7}{12.6}$

+50

$\frac{-5.1}{14.7}$ -7.0 $\frac{-10.1}{22.2}$

+80

$\frac{-5.5}{15.3}$ -7.8 $\frac{-10.9}{23.4}$

927

$\frac{-4.9}{14.4}$ -9.4 $\frac{-7.6}{18.4}$

+15

+3.50

$\frac{-6.7}{17.1}$ -4.7 $\frac{-5.1}{14.7}$

+35

$\frac{0.0}{8.0}$ -0.3 $\frac{-1.2}{8.8}$

+40

$\frac{+0.5}{8.1}$ +0.5 $\frac{0.0}{8.0}$

+65 3675.65

$\frac{+4.8}{9.2}$ +3.7 $\frac{+2.5}{8.6}$

Areas Cub yds
Cut Fill Exc Emb

152.52

165.7

103.18

Sta 925+15 to 927+40

136.7 Embk 1012.9 Cy.

44.43

made from Cuts. N.

210.0

182.35

217.0

208.33

150.4

197.91

87.2

116.03

45.5

00

6.72

0.4 0.4

6.03

00

1012.9

31.5

62.13

114.4

146.3

✓
10/11/11

Station Grade

928

3676.87

$\frac{+82}{10.1}$

+6.5

$\frac{+4.7}{9.2}$

+50

$\frac{+92}{10.3}$

+6.0

$\frac{+4.2}{9.1}$

+85

$\frac{+32}{8.8}$

+1.0

$\frac{+0.4}{8.1}$

929

$\frac{+51}{9.3}$

+2.7

$\frac{+1.8}{8.5}$

+65

$\frac{+29}{8.7}$

+1.0

$\frac{00}{8.0}$

+90

$\frac{+20}{9.8}$

+5.6

$\frac{+4.7}{9.2}$

930+05

$\frac{+82}{10.1}$

+6.0

$\frac{+4.1}{9.0}$

+50

$\frac{+98}{10.5}$

+8.6

$\frac{+7.1}{9.8}$

931

$\frac{+48}{9.2}$

+2.6

$\frac{00}{8.0}$

+35

469+85

$\frac{+53}{9.3}$

+3.9

$\frac{+1.8}{8.5}$

+55

3689.30

$\frac{+38}{9.0}$

+1.7

$\frac{00}{8.0}$

Areas Cub. Yds.
Cut Fill Exc. Emb

146.3

114.32

209.4

111.80

Sta 927+35 to 931+75 Exp

87.3 1425.0 C.Y. Solid Rock.

22.85

Haul 12% Do from

20.7 " 1050. from 930 to 925+20

51.63

= 5040 yds. Haul

86.2

19.95

55.5

100.00

57.4

106.50

217.8

154.89

181.9

41.56

67.8

63.11

29.65 00

34.4

17.4

1164.7



v. C.H.

Station	Grade	L	C	R
931+75	3690.00	$\frac{00}{8.0}$	-3.6	$\frac{-7.0}{17.5}$

+90		$\frac{-7.5}{18.3}$	11.4	$\frac{17.3}{33.0}$
-----	--	---------------------	------	---------------------

932+05		$\frac{-4.3}{13.5}$	-5.1	$\frac{-12.7}{26.1}$
--------	--	---------------------	------	----------------------

+30		$\frac{00}{8.0}$	1.6	$\frac{-4.2}{13.3}$
-----	--	------------------	-----	---------------------

+50	3350	$\frac{+3.0}{8.8}$	+1.4	$\frac{00}{8.0}$
-----	------	--------------------	------	------------------

933		$\frac{+1.02}{10.6}$	+9.0	$\frac{+7.2}{9.6}$
-----	--	----------------------	------	--------------------

+35		$\frac{+14.6}{11.7}$	+11.8	$\frac{+10.2}{10.6}$
-----	--	----------------------	-------	----------------------

+60		$\frac{+12.3}{11.1}$	+10.0	$\frac{+8.4}{10.1}$
-----	--	----------------------	-------	---------------------

934	3697.87	$\frac{+10.5}{10.6}$	+8.4	$\frac{+5.8}{9.5}$
-----	---------	----------------------	------	--------------------

+55	3699.25	$\frac{+10.5}{10.6}$	+6.9	$\frac{+4.5}{9.1}$
-----	---------	----------------------	------	--------------------

Areas (Cub)ds.

Cut Fill Exc. Emb

00 70.40

1164.7
7.3

17.4

Sta 931+55 to 932+50

5.9
1172.0
253.0
1425.0

124.9 Emb. 389.0 C.Y.

379.21

made from Cut N

1499

160.48

89.0

00 31.74

5.9

7.8

23.76 00

389.0

170.6 Sta 932+30 to 936+75

160.50

Exc 1861.7 Cub yds. Solid Rock

2536

230.77

Haul 1605 So far

" 77. N "

" 100 from 933+05 to 931+80 = 125

194.2

" 530 + 933+45 to 924+35 = 4820

188.80

" 160 + 933+95 to 922+55 = 1825

" 300 + 935+35 to 937+15 = 540

250.7

Total haul 7310.

149.62

282.7

127.97

65.3

1223.0

Station Grade

934+75 3699.75

$\frac{+7.0}{9.8}$

+2.3

$\frac{0.0}{8.0}$

+85

$\frac{+7.9}{10.0}$

+4.9

$\frac{+7.4}{8.6}$

935+30

$\frac{+7.9}{10.0}$

+4.4

$\frac{+1.9}{8.5}$

+40

$\frac{+4.5}{9.1}$

+1.0

$\frac{0.0}{8.0}$

+45

$\frac{+6.0}{9.5}$

+1.7

$\frac{0.0}{4.0} - \frac{2.0}{10.0}$

+55

+2.52

$\frac{+8.1}{10.0}$

+4.0

$\frac{0.0}{8.0}$

+60

$\frac{+7.9}{10.0}$

+4.7

$\frac{+1.0}{8.3}$

936+20

$\frac{+5.5}{9.4}$

+2.6

$\frac{0.0}{8.0}$

+50

$\frac{+3.3}{8.8}$

+0.5

$\frac{0.0}{1.5} - \frac{4.7}{14.1}$

+75

3704.79

$\frac{0.0}{8.0}$

-1.6

$\frac{-9.0}{19.4}$

(End of Wall)

+85

$\frac{-22.0}{26.0}$

Wall 14.0
Slope $\frac{1}{2}:1$

heads Cubyds
Cut Fill Exc Emb

48.47

12230

25.0

86.77

138.9

79.90

19.7

26.55 00

5.7 02

35.48 300

19.2 04

0.6

68.40 00

13.6

78.60

136.9

44.62 00

33.6 48

15.78 12.92

4.9 30.7

00

53.42

1620.5

241.2 50.

1861.7 120.6

156.1

of)

140
2.11

Station Grade

L

C

R

936+95 3705.29

$\frac{-5.7}{15.6}$

-80

$\frac{-18.0}{23.0}$ Wall 10.0
Slope $\frac{1}{2}:1$

937+10

$\frac{-3.9}{12.9}$

-6.6

$\frac{-15.0}{21.5}$ Wall 7.0
 $\frac{1}{2}:1$ Slope

+20

$\frac{-14.0}{21.0}$ Wall 6.0
 $\frac{1}{2}:1$ Slope

+40

$\frac{-5.2}{14.8}$

-9.9

$\frac{17.2}{22.6}$ Wall 9.2
 $\frac{1}{2}:1$ Slope

+60

$\frac{-13.6}{20.8}$ Wall 5.6
 $\frac{1}{2}:1$ Slope

+70

$\frac{-6.3}{16.5}$

-10.4

$\frac{-16.6}{31.9}$ End of
Wall

938

3707.96

$\frac{-6.0}{16.0}$

-7.2

$\frac{-15.5}{30.3}$

+40

$\frac{-9.7}{21.6}$

-15.2

$\frac{-33.4}{38.0}$

$\frac{-36.0}{61.0}$

+60

$\frac{-14.6}{28.9}$

-15.7

$\frac{-20.6}{24.0}$

$\frac{-25.8}{45.7}$

+78

$\frac{-16.2}{31.3}$

$\frac{-27.4}{10.0}$

-28.4

$\frac{-16.4}{31.6}$

+95

$\frac{-10.6}{22.9}$

-9.5

$\frac{-11.6}{24.4}$

939+27

3711.70

$\frac{0.0}{8.0}$

-2.2

$\frac{-4.2}{13.3}$

Areas Cub yds
Cut Fill Exc Emb

272.35

156.1

Sta 936+75 to 937+70

132.4

Wall.

Top 2' Thick

Bottom 4 " } 79.0

204.18

Toe Wall $\frac{1}{2}(4 \times 6.5 \times 9) = 4.3$

277.7 Total Wall = 83.3 Cy.

295.73

348.6

331.83

Sta 936+20 to 939+40

318.8 Emb. 3956.1 Cub yds

241.93

Made from Cuts.

881.1

947.61

616.8

717.78

590.1

1052.63

426.6

302.38

201.8

00

3813

3.0

6.1

3956.1

✓

Station	Grade	L	C	R
---------	-------	---	---	---

939+40	3712.09	+3.0 8.8	+0.8	0.0 8.0
--------	---------	-------------	------	------------

+85	+295	+7.0 9.8	+5.1	+4.1 9.0
-----	------	-------------	------	-------------

940+30		+10.1 10.5	+7.8	+5.5 9.4
--------	--	---------------	------	-------------

940+30 ⁹	3714.77			
---------------------	---------	--	--	--

+55		+9.3 10.3	+5.6	+3.2 8.8
-----	--	--------------	------	-------------

941		+13.0 11.3	+11.2	+9.5 10.4
-----	--	---------------	-------	--------------

+50		+16.7 12.2	+15.0	+13.9 11.5
-----	--	---------------	-------	---------------

942+10		+18.4 12.6	+17.5	+16.4 12.1
--------	--	---------------	-------	---------------

+30	+3.27	+16.8 12.2	+15.3	+14.5 11.6
-----	-------	---------------	-------	---------------

+80		+6.2 9.6	+3.3	+2.5 8.6
-----	--	-------------	------	-------------

943+05	3723.73	+3.2 8.8	+1.6	0.0 8.0
--------	---------	-------------	------	------------

Areas . Cubyds.
Cut Fill Exc. Emb

18.72 00 slip ^{3.9} 8.9

slip 31.8
92.6 Sta 939+27 to 943+15

92.34

slip 42.8
193.6 Exp 3072.7 Cub. Yds.

140.01

from 940+50 to 941+50 Class 2p 2 1/2
in original section LoR. = 195.0

slip 30.8 942+80 to 943+15 class LoR. = 40.4

112.7 Class Slips LoR. = 348.3

103.48

Balance of Cut Solid Rock

slip 25.3

Total To Rock 588.7 Cu

262.5

" Solid 2484.0 "

211.52

slip 36.5

Haul 1600 ft

473.8

" 2100. from 941+40 to 938+40
= 6300 Haul

300.15

slip 136.9

728.3

355.33

slip 25.3

245.4

307.27

slip 10.0

344.5

64.83

42.2

26.24 00

3.2 1.3

2850.1

222.6 56.

3072.7

1 244

Station	Grade	L	C	R
---------	-------	---	---	---

943	+15	37	24.06	00 80	-10	-07 8.1
-----	-----	----	-------	----------	-----	------------

+40	-105 228	-12.1	-142 28.3
-----	-------------	-------	--------------

+55	00 80	-4.1	-72 17.8
-----	----------	------	-------------

+65	+48 9.2	+3.1	00 80
-----	------------	------	----------

+75	+6.1 9.6	+4.8	+30 8.8
-----	-------------	------	------------

944	+3.27	+5.6 9.4	+3.7	+19 8.5
-----	-------	-------------	------	------------

+50	+3.2 8.8	+1.8	00 8.0
-----	-------------	------	-----------

945	+3.4 8.9	+1.4	00 6.0	-05 7.8
-----	-------------	------	-----------	------------

+30	+4.5 9.1	+0.7	00 1.5	-62 76.3
-----	-------------	------	-----------	-------------

+60	37	32.07	+54 9.4	+2.0	00 6.0	-10 8.5
-----	----	-------	------------	------	-----------	------------

Areas Cub yds
Cut Fill Exc Emb

00	10.50		13	Sta 943+05 to 943+65
			188.0	Emb 330.5 C.Y.
	395.61			Made from Cuts
			131.6	
00	78.09			
		5.7	9.6	
445.86	00		330.5	
		23.4		
80.56				
		64.7		
6312				
		84.3		
27.92	00			
		48.1	0.2	
24.03	0.25			Sta 944+56 to 944+85
		25.4	9.6	Emb. 24.6 C.Y. made from Cut.
21.71	17.05			
		34.7	9.8	
40.78	0.50			
		14.6	3.5	
		300.9	23.1	

Station Grade

L	C	R
+2.9 87	00	-35 12.3

945+75 3732.56

+85

+4.5 91	+23	00 80
------------	-----	----------

946+50

+8.6 102	+5.0	+2.2 86
-------------	------	------------

947

+3.27

+11.2 108	+7.0	+3.3 88
--------------	------	------------

+40

+10.4 106	+5.5	00 80
--------------	------	----------

947+51 3738.32

+10.3 106	+5.4	+1.2 83
--------------	------	------------

+65

+12.6 112	+7.0	+3.2 88
--------------	------	------------

948

+11.6 109	+5.7	+0.9 82
--------------	------	------------

+10

+3.02

+10.9 107	+5.7	00 80
--------------	------	----------

+23 3740.48

+9.9 105	+5.0	00 -10.5 6.0 21.4
-------------	------	----------------------

Areas Cub. Yds
Cut Fill Exc Emb

11.60

12.25

300.9

23.1

9.1

1.5

37.67

00

24.6

153.9 Sta 943+55 1/2 951+75

9020

Exc. 2283.8 Cy. Solid Rock

200.7

126.60

Haul 480 yds from 950+30 to
959+05 = 4200 yds Haul

162.5

92.75

38.7

97.03

59.7

133.20

154.0

104.44

37.3

96.89

00

42.8 08

80.85

5.25

77.6 174.3

1237.2 175.1

✓

Station Grade

948+47.3741.22

L	C	R
+10.8 10.7	+5.7	0.0 - 45.8 - 45.5 7.0 53.0 69.6

+60

+8.4 10.1	+4.4	0.0 - 38.2 - 45.0 - 44.0 4.0 58.0 64.0 68.0
--------------	------	--

949

+8.4 10.1	+2.6	0.0 - 8.0 5.0 19.0
--------------	------	-----------------------

+10

+6.4 9.6	+1.0	0.0 - 22.4 2.0 40.6
-------------	------	------------------------

+22

+2.8 8.7	0.0 - 1.1 2.5 15.3	-5.5
-------------	-----------------------	------

+35

+2.79

+6.1 9.5	+2.7	0.0 8.0
-------------	------	------------

+50

+9.0 10.3	+6.6	+3.7 8.9
--------------	------	-------------

+80

+11.0 10.8	+7.6	+3.9 9.0
---------------	------	-------------

+90

+10.6 10.7	+6.1	+1.5 8.4
---------------	------	-------------

950

3745.48

+11.0 10.8	+7.0	+3.8 9.0
---------------	------	-------------

12

Areas Cub. Yds.
Cut Fill Exc. Emb.

93.64 387.04

1237.2 175.1

Sta 9+81 to 9+935

38.1 119.4 Emb 416.6 Cy.

64.62 108.90

Made from Cat-

87.3 86.6

53.23 8.00

15.7 11.9

31.40 56.09

8.7 18.9

7.70 29.04

13.4 4.7

48.02 00

416.6

45.1

114.16

138.3

134.84

44.7

106.66

43.5

128.50

202.2

1874.2

1000

Station Grade

950+50 3746.88

$\begin{array}{r} +8.1 \\ 10.2 \end{array}$ +4.8 $\begin{array}{r} +2.5 \\ 8.6 \end{array}$

+70

$\begin{array}{r} +7.6 \\ 9.9 \end{array}$ +2.2 $\begin{array}{r} 00 \\ 80 \end{array}$

+80

$\begin{array}{r} 00 \\ 80 \end{array}$ -1.6 $\begin{array}{r} -4.6 \\ 13.9 \end{array}$

+90

$\begin{array}{r} +3.1 \\ 8.8 \end{array}$ +1.5 $\begin{array}{r} 00 \\ 80 \end{array}$

951

$\begin{array}{r} +6.8 \\ 9.7 \end{array}$ +4.0 $\begin{array}{r} +1.4 \\ 8.4 \end{array}$

+40

+2.79

$\begin{array}{r} +5.9 \\ 9.5 \end{array}$ +2.5 $\begin{array}{r} 00 \\ 80 \end{array}$

+60

$\begin{array}{r} +4.8 \\ 9.2 \end{array}$ +1.9 $\begin{array}{r} 00 \\ 4.5 \end{array}$ $\begin{array}{r} -1.0 \\ 8.5 \end{array}$

+75

$\begin{array}{r} 00 \\ 80 \end{array}$ -2.2 $\begin{array}{r} -10.3 \\ 22.5 \end{array}$

+80

$\begin{array}{r} -1.5 \\ 9.3 \end{array}$ -3.5 $\begin{array}{r} -11.6 \\ 29.4 \end{array}$

+83 3750.59

$\begin{array}{r} 0.0 \\ 8.0 \end{array}$ -1.4 $\begin{array}{r} -11.6 \\ 24.4 \end{array}$

Areas Cub yds
Cut Fill Exc. Emb

18742

89.92

51.8

50.09 00

6.2

4.2

Sta 950+70 to 950+90

00 33.62

Emb. 8.4 Cu.
made from Cut

3.1

4.2

8.4 ✓

25.00 00

17.4

69.00

84.8

45.47 00

28.8

0.3

32.42 1.25

Sta 951+40 to 952+22

6.0

19.7

Emb. 58.0 Cu.

00

69.60

2072.3

211.5 = 1/4 54.

2283.8

made from Cut Sta

16.1

104.82

9.3

00

63.28

2.0

9.3

54.7

✓ 244

Station Grade.

L C R

951+90 3750.79 $\begin{array}{r} +3.4 \\ 8.9 \end{array}$ +1.4 $\begin{array}{r} 00 \\ 5.0 \end{array}$ $\begin{array}{r} -8.3 \\ 19.5 \end{array}$

+2.79
952+22 3751.68 $\begin{array}{r} +7.5 \\ 9.9 \end{array}$ +3.1 $\begin{array}{r} 00 \\ 8.0 \end{array}$

+65 $\begin{array}{r} +10.4 \\ 10.6 \end{array}$ +5.7 $\begin{array}{r} +2.0 \\ 8.5 \end{array}$

+3.02
+80 $\begin{array}{r} +9.1 \\ 10.3 \end{array}$ +5.6 $\begin{array}{r} +2.7 \\ 8.7 \end{array}$

953+05 $\begin{array}{r} +6.0 \\ 9.5 \end{array}$ +2.6 $\begin{array}{r} 00 \\ 8.0 \end{array}$

953+18 3754.58
+40 $\begin{array}{r} 00 \\ 8.0 \end{array}$ -2.6 $\begin{array}{r} -10.0 \\ 22.0 \end{array}$

+3.39
+65 3756.18 $\begin{array}{r} +1.6 \\ 8.4 \end{array}$ 00 $\begin{array}{r} -1.4 \\ 9.1 \end{array}$

+70 $\begin{array}{r} +2.4 \\ 8.6 \end{array}$ +1.2 $\begin{array}{r} 00 \\ 8.0 \end{array}$

+3.12
954 $\begin{array}{r} +9.1 \\ 10.3 \end{array}$ +5.8 $\begin{array}{r} +2.7 \\ 8.7 \end{array}$

+40 3758.52 $\begin{array}{r} +12.2 \\ 11.1 \end{array}$ +9.4 $\begin{array}{r} +5.8 \\ 9.5 \end{array}$

Areas Cub yds
Cut Fill Exc. Emb

23.33 8.30

48.0 3.3

57.74

00

58.0

Slip 1 5.0

128.8

Sta 95+83 to 95+05 Exc 971.0
Class Slip to Rock = 50.0 Cu yds
Balance Cut Solid Rock = 921.0 " "

104.03

56.0 Haul 731 from 95+80 to 95+70

100.40

= 3580 yds Haul

68.1

46.75

00

20.2 32.0

00

74.00

Sta 95+05 to 95+70

2.0

36.5

Emb 68.8 Cu yds

6.40

4.90

Made from Cut

2.4

0.3

19.56

00

68.8

Slip 5.0

67.7

102.30

200.8

168.82

Slip 30.0

182.2

828.2

✓

Station Grade

L

C

R

954+173 3759.55

+9.6
10.4

+7.0

+5.4
9.4

+95

+3.1
8.8

+0.6

0.0
8.0

955+05

0.0
8.0

-2.9

-5.0
14.5

+15

-5.0
14.5

-7.6

-11.0
15.0

-13.5
19.0

-12.4
25.6

+25

-2.1
10.1

-4.1

-5.2
14.8

+50

+2.84

-2.3
10.5

-2.1

-2.4
10.6

+55

0.0
8.0

0.0

-1.0
8.5

+60

+2.3
8.6

-1.5

0.0
8.0

956

+1.9
8.5

+2.2

+0.8
8.2

+10 3763.43

+1.9
8.5

+0.7

0.0
8.0

Area's Cub Yds
Cut Fill Exc Emb

129.30

828.2

59.8

17.44 00

2.2 6.2

00 50.12

890.7

80.8 = 1/2 56.

971.0

Sta 954 + 956 to 956

231.25

Emb'd 184.8 C. 7.

57.0 Made from Cuts

76.60

53.3

38.60

3.9

35.0

2.2

00 20.50

Sta 955 + 60 to 956 + 25

14.4

10.1

Exc 360 C. 4. Solid Rock

29.17 00

184.8

Hauled n. ym

7.9

13.37 00

2.5

6.6

74.8

11.2

36.0

1977

Station	Grade	L	C	R
956+25	3763.86	$\frac{00}{80}$	-1.6	$\frac{-50}{14.5}$
+35		$\frac{-1.1}{8.6}$	-3.0	$\frac{-6.1}{16.1}$
+50		$\frac{-1.3}{8.9}$	-1.4	$\frac{-5.0}{14.5}$
+70		$\frac{-1.6}{9.4}$	-2.3	$\frac{-8.2}{19.3}$
+90		$\frac{-2.2}{17.8}$	-8.1	$\frac{-13.1}{26.6}$
957+15	+2.84	$\frac{-2.4}{10.6}$	-4.5	$\frac{-7.0}{17.5}$
+50		$\frac{-3.0}{11.5}$	-4.0	$\frac{-7.7}{18.4}$
958		$\frac{-4.8}{14.2}$	-6.9	$\frac{-8.9}{20.4}$
+50		$\frac{-6.1}{16.1}$	-7.1	$\frac{-8.0}{19.0}$
959	3771.67	$\frac{-10.0}{22.0}$	-9.9	$\frac{-12.0}{25.0}$

Heads Cubyds
Cut Fill Exc Emb

00 35.50

6.6

Sta 956+10 to 959+57

18.1 Emb. 1977.5 Cu. Yds

62.25

made from Cuts.

28.0

38.43

39.2

67.30

122.8

264.19

166.8

96.12

125.3

97.25

245.0

167.32

316.0

173.95

447.8

309.65

95.7

1611.3

✓ 444

Station Grade

959+08 H/B

$\frac{-11.0}{23.5}$

-10.1

$\frac{-13.0}{26.5}$

959+59⁴ 03773.36

959+57 Toe

-35.6

959+92 Toe

-36.0

960+42 H/B

$\frac{-16.5}{31.8}$

-19.4

$\frac{-25.9}{45.9}$

960+69⁴ 03776.73

960+70

$\frac{-10.6}{22.9}$

-13.9

$\frac{-20.5}{37.7}$

961+22

$\frac{0.0}{8.0}$

-2.1

$\frac{-5.0}{14.5}$

+45

$\frac{+3.3}{8.8}$

+1.9

$\frac{0.0}{8.0}$

961+49 03779.50

962

$\frac{+13.0}{11.3}$

+10.6

$\frac{+7.5}{9.9}$

+40

$\frac{+2.5}{8.6}$

+1.9

$\frac{+0.9}{8.2}$

+75 3783.40

$\frac{+13.4}{11.4}$

+9.9

$\frac{+6.5}{9.6}$

Areas Cub Yds
Cut Fill Exc Emb

336.50

1611.3

366.2

1977.5

895.3

902.09

Sta 759 + 92 to 961 + 45

Emb. 2196.6 Cy.

739.6 made from Cut H

5300.2

550.0

00

41.12

8.3

11.7

29.16

00

2196.6

227.7

194.36

slip 9.0

165.9

29.56

slip 8.8

138.1

183.55

159.4

71.6.4



244

Station Grade

963

3784.17

+11.7
10.9

+8.7

+6.2
9.6

+30

+14.0
11.5

+10.3

+5.8
9.5

+40

+3.08

10.4
10.6

+7.8

+5.8
9.4

+50

+11.0
10.8

+9.1

+7.4
9.9

963+75 3786.47

964

+9.3
10.3

+6.7

+4.8
9.2

+65

+3.40

+4.9
9.2

+3.0

0.0
8.0

+80

0.0
8.0

-3.2

-12.8
2.00

-1.93
28.0

-18.5
34.8

964+89 3790.34

965+10

-7.2
17.8

-14.1

-16.2
5.0

-16.8
14.0

-12.6
25.9

+36

+3.07

-13.6
27.4

-18.7
22.0

-4.0

-6.9
17.4

+50

+3.07

3792.21

0.0
8.0

+0.3

0.0
2.0

0.4
7.6

Areas Cubyds.

Cut Fill Exc Emb

160.77

716.4

Sta 961 + 100 to 964 + 180 Exc 1646.6 ^{cu}

193.4 Class Slips L.R. = 17.0 @ 4.

Balance Cut Solid R = 1629.67

187.35

61.1 Haul 139 to 140

142.80

" 800 from 962 + 70 to 960 + 45
= 1800 yds Haul

57.5

167.78

268.1

121.72

201.2

445.40 00

8.4 31.9

1506.1

00 172.57

140.5 = 0750.

1646.6

335.2 Sta 964 + 165 to 965 + 10

43080

Emb 765.3 @ 4.

331.2 Made from Cuts

00 257.14

0.3 66.9

1.50 1.00

2.0 0.1

2.3

765.3

✓ 944

Station Grade

L

C

R

965+55 3792.37

+2.5
8.6

+1.2

0.0
8.0

965+79 3793.10

+10.4
10.6

+9.2

+12.6
9.9

966

+13.1
11.4

+10.5

+8.1
10.0

+25

+10.4
10.6

+4.6

0.0
8.0

+50

+9.0
10.2

+2.2

0.0 - 2.54
3.0 4.51

967

+9.0
10.2

+3.5

0.0 - 0.2
7.0 7.3

+70

0.0
8.0

-4.0

-17.0
32.5

+80

-1.6
9.4

-5.1

-18.8
33.2

968+05

0.0
8.0

-3.4

-12.6
33.4

968+17 3799.69

+18

0.0
8.0

-2.0

-10.6
22.9

11245 Cuydes
Cut Fill Exc. Emb

1996	00		Sta 965+36 to 967+70 Exc
		82.8	681.7 Cuyds.
166.30			Class Slip To Rock. 6.0 @ 4.
			Balance Solid v 675.2 "
		142.3	
199.55			Have 277.5 So far
			" 132.2 "
		131.4	" 130 from 966+40 to 967+95
			= 200 yds Haul
84.38	00		note 103.
		62.5	
50.52	50.80		
			Slip 6.0
		108.0	31.3
66.10	00		
		57.1	121.4
		592.4	
00	140.50	88.8	55 Sta 966+25 to 969+05
		681.2	
		60.3	Emb. 850.5 Cuyds
185.13			Made from Cuts
		146.8	
131.98			
		48.1	
68.00			
		264.6	
		672.5	

Station Grade

968+55 3800.83

-57
156

-10.3

-162
31.3

+75

00
80

-32

-9.7
21.6

969+05

+8.4
10.1

+3.9

00
80

969+07.8 3802.45

+55

+17.0
12.3

+12.2

+8.1
10.0

969+64 3804.36

+90

+20.6
13.2

+16.3

+13.0
11.3

970+15

+20.0
13.0

+14.3

+10.8
10.7

+25

+12.5
11.1

+10.5

+7.0
9.8

+40

+19.0
12.8

+13.8

+10.1
10.5

970+48 3807.03

+90

+17.5
12.4

+14.0

+10.2
10.6

971+10 3808.89

+15.2
11.8

+10.2

+6.9
9.7

Areas Cub.yds

Cut Fill Exc. Emb

672.5

318.18

147.9

00 81.31

25.5 30.1

68.89 00

850.5

282.7 968 + 75 to 992 + 40 Exc.

236.43

2664.3 Cub. yds.

369.7 Class Slips To Rock = 71.0 cu. yds.
Balance Solid Rock = 2593.3

334.07

Slip 6.0

290.2 Haul 209.80. per

" 200 N "

292.65

" 220. from 969 + 60 to 968 + 20 = 310
" 1540 " 970 + 70. 973 + 20 = 3850

89.0 waste 300. Total haul 4160 1/2

187.72

129.1

277.17

Slip 10.0

508.3

271.80

Slip 50.0

174.0

198.05

268.6

2203.1

✓

Station	Grade	L	C	R
971	+50 3810.09	$\frac{+12.9}{11.2}$	+8.6	$\frac{+6.0}{9.5}$

972		$\frac{+7.4}{9.9}$	+3.8	$\frac{+1.9}{8.5}$
-----	--	--------------------	------	--------------------

+10		$\frac{+6.0}{9.5}$	+3.0	$\frac{0.0}{8.0}$
-----	--	--------------------	------	-------------------

+30		$\frac{+0.5}{8.1}$	$\frac{0.0}{7.0} - 3.3$	$\frac{-12.5}{25.8}$
-----	--	--------------------	-------------------------	----------------------

+40		$\frac{0.0}{8.0}$	-2.6	$\frac{-12.2}{25.3}$
-----	--	-------------------	------	----------------------

+75	+300	$\frac{-2.8}{11.2}$	-6.1	$\frac{-16.0}{31.0}$
-----	------	---------------------	------	----------------------

+90		$\frac{-9.0}{20.5}$	-14.7	$\frac{-23.8}{42.7}$
-----	--	---------------------	-------	----------------------

973		$\frac{-11.0}{23.5}$	-18.0	$\frac{-21.2}{7.0}$	$\frac{-21.2}{15.0}$	$\frac{-18.2}{34.3}$
-----	--	----------------------	-------	---------------------	----------------------	----------------------

+35		$\frac{-15.3}{30.0}$	$\frac{-17.0}{24.0}$	-19.6	$\frac{-19.6}{5.0}$	$\frac{-9.8}{21.7}$
-----	--	----------------------	----------------------	-------	---------------------	---------------------

+65	3816.54	$\frac{-14.6}{28.9}$	$\frac{-17.0}{25.0}$	$\frac{-17.0}{20.0}$	$\frac{-11.0}{12.0}$	$\frac{-10.0}{16.8}$
-----	---------	----------------------	----------------------	----------------------	----------------------	----------------------

Areas Cubyds
Cut Fill Exc. Emb

164.61

2203.1

Slip 5.0

219.2

72.16

227

50.25 00

18.7 24.2

0.25 97.87

03 34.0

00 85.99

2469.0

195.3 5.9.

2664.3

181.8 Sta 77+10 to 973+95

194.51

Emb'd 2242.5 cu.

214.9 Made from Cuts

579.32

2348

688.54

855.7

631.61

535.1

331.50

161.0

2241.5

✓

1944

Station	Grade	L	C	R
---------	-------	---	---	---

973+90	3817.29	$\frac{-3.0}{11.5}$	-0.6	$\frac{0.0}{8.0}$
--------	---------	---------------------	------	-------------------

+95		$\frac{0.0}{8.0}$	+0.9	$\frac{+1.8}{8.5}$
-----	--	-------------------	------	--------------------

974+20		$\frac{+2.7}{8.7}$	+5.5	$\frac{+7.9}{10.0}$
--------	--	--------------------	------	---------------------

+30		$\frac{+0.4}{8.1}$	+4.7	$\frac{+8.0}{10.0}$
-----	--	--------------------	------	---------------------

+50		$\frac{0.0}{8.0}$	+5.7	$\frac{+8.2}{10.1}$
-----	--	-------------------	------	---------------------

975	3300	$\frac{+4.9}{9.2}$	+8.0	$\frac{+9.2}{10.3}$
-----	------	--------------------	------	---------------------

+50		$\frac{+10.2}{10.6}$	+10.8	$\frac{+13.1}{11.3}$
-----	--	----------------------	-------	----------------------

976		$\frac{+13.2}{11.3}$	+13.0	$\frac{+12.4}{11.1}$
-----	--	----------------------	-------	----------------------

+50		$\frac{+13.2}{11.3}$	+12.0	$\frac{+10.7}{10.7}$
-----	--	----------------------	-------	----------------------

977	3826.59	$\frac{+12.8}{11.2}$	+11.3	$\frac{+9.7}{10.4}$
-----	---------	----------------------	-------	---------------------

Areas Cut (1) as
Cut Fill Exc. Emb

00 16.35

09 1.0

14.62 00

224.5

50.2 Sta 973+90 to 978 Exc 2927.0

93.83

class mat'l in regular sections

973+90 to 976+75 SR = 1310.4 ✓

31.5 976+75 to 976+75 1/2 SR = 211.9 ✓

1/2 L.R. = 211.9 ✓

76.12

976+75 to 978 3/4 L.R. = 676.0 ✓

1/3 Ex = 338.0 ✓

59.4 Sub Grade SR. 165.8 ✓

Slips to R. 13.0 ✓

84.38

Total Earth 3380 Cu yds ✓

202.6 " Lo. Rock 900.9 " " ✓

134.40

" Solid " 1688.1 " " ✓

Slip 4.0

320.2 Haul 8 1/2 yds Lo per

211.46

" 2680 from 976+40 to

982 = 15010 yds Haul

425.4

248.00

Sta 976+75 to 978 Exc,

Slip 6.0

440.4 Side Ditch in each side

227.60

of Cut = 18.5 Cu ft. Lo. Rock

Slip 3.0

407.1

212.04

394.6

2345.3

Section 19

Station Grade L C R

977+50 3828.09 +127
11.2 +11.2 +10.3
10.6

978 3829.59 +137
11.4 +12.4 +10.8
10.7

978+372 3830.71

Areas	Cub. Yds
Cut	Fill
Exc	Emb

214.08

2345.3

4159

235.02

2761.2

165.8 SE. 973+906+976+75

2927.0



SECTION 19

PAGE	Acres	Excavation - Cub. Yds.				Total Embankment Cub. Yds.	
		Clearing	Total in Cut	Earth	Loose Rock		Solid Rock
51							1012.9
52			1425.0 ✓			1425.0 ✓	
53			1861.7			1861.7	389.0 ✓
55							3956.1 ✓
56			3072.7 ✓		588.7 ✓	2484.0 ✓	
57							330.5 ✓
57							246 ✓
58			2283.8 ✓			2283.8 ✓	
59							416.6 ✓
60							8.4 ✓
60							58.0 ✓
61			971.0 ✓		50.0 ✓	921.0 ✓	68.8 ✓
62			36.0 ✓			36.0 ✓	1848 ✓
63							1977.5 ✓
64							2196.6 ✓
65			1646.6 ✓		17.0 ✓	1629.6 ✓	765.3 ✓
66			681.2 ✓		6.0 ✓	675.2 ✓	850.5 ✓
67			2664.3 ✓		71.0 ✓	2593.3 ✓	
68							2242.5 ✓
69			2927.0 ✓	338.0 ✓	900.9 ✓	1688.1 ✓	
69			18.5 ✓		18.5 ✓		
			17587.8 ✓	338.0 ✓	1652.1 ✓	15977.7 ✓	14482.1 ✓

SUMMARY

Ckment Yds.	Cu. Yds Bank made from Cuts	Cu. Yds Shrinkage deducted	Borrow-Cu. Yds		Cub. Yds. Hauled 100'	Fr. B.M. Lumber in Culverts	Cu. Yds. Slope Wall
			Earth	Loose Rock			
12.9	1012.9						
89.0	389.0				5040		
56.1	3956.1				7310		
							83.3
30.5	330.5				6300		
24.6	24.6						
16.6	416.6				4200		
8.4	8.4						
58.0	58.0						
68.8	68.8				3580		
84.8	184.8						
77.5	1977.5						
96.6	2196.6						
65.3	765.3				1800		
50.5	850.5				200		
42.5	2242.5				4160		
					15010		
2.1	14482.1				47600		83.3



SECTION 19 -COST.

EXVACATION, EARTH, 338 W.YDS. @ \$ 0.14 = \$ 47.32

" , L. ROCK, 1652.1 " " @ \$ 0.32 = 528.67

" , S. ROCK, 15597.7 " " @ 0.80 = 12478.16

HAUL , 100 FT., 47600 " " @ 0.015 = 714.00

SLOPE WALL, 83.3 " " @ \$ 2.00 = 166.60

TOTAL = \$ 13934.75

47.32

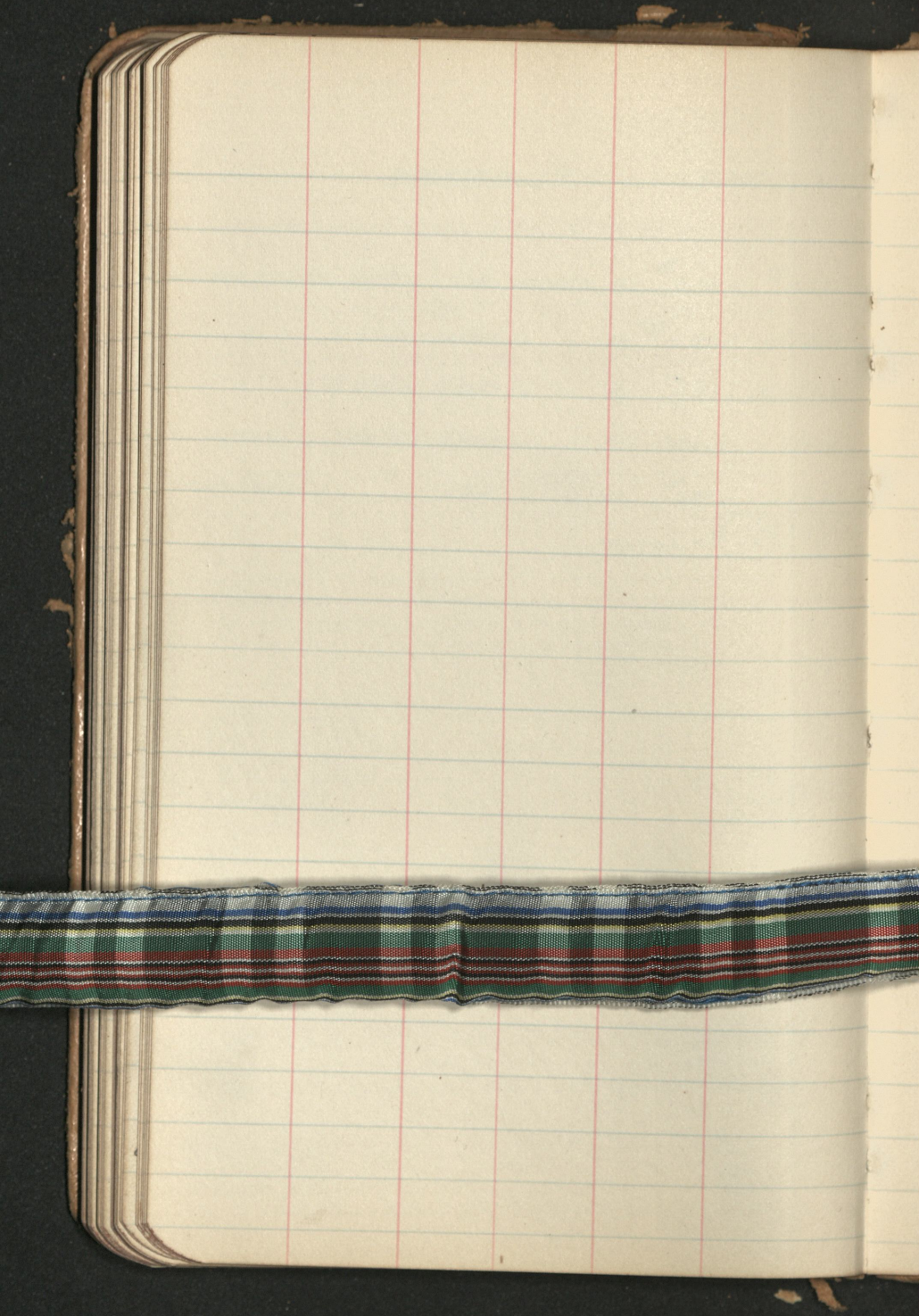
28.67

78.16

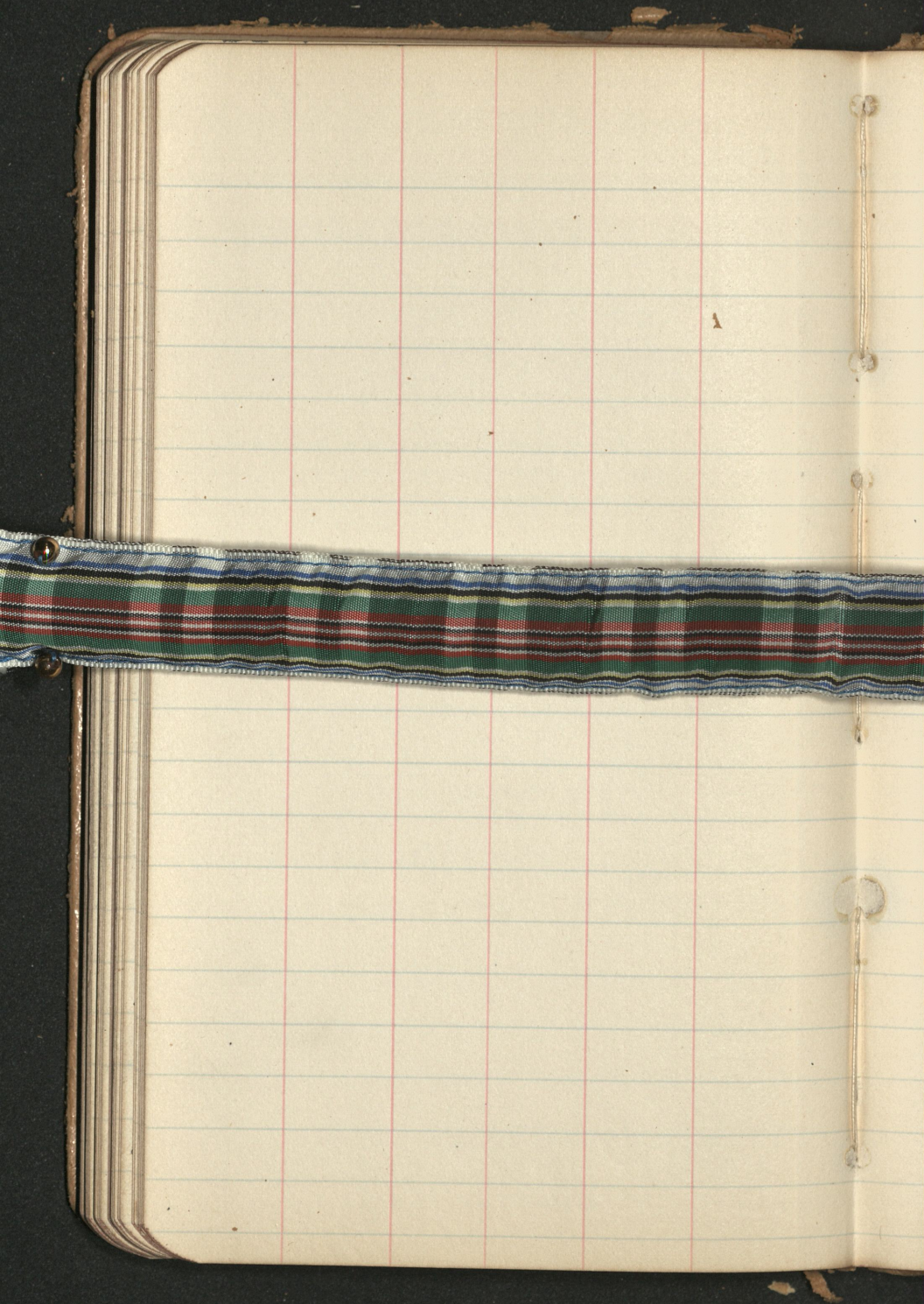
14.00

66.60

47.5

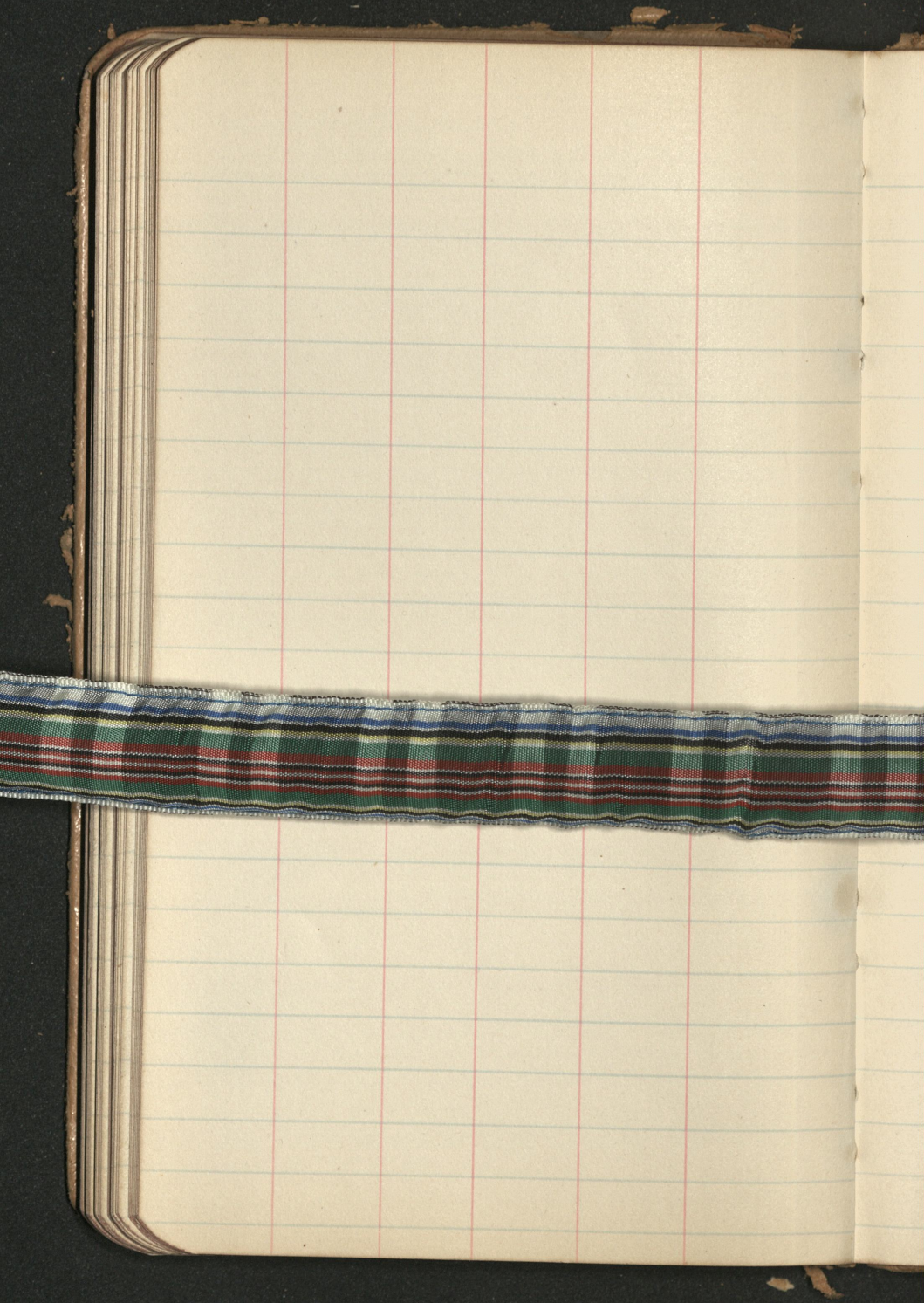






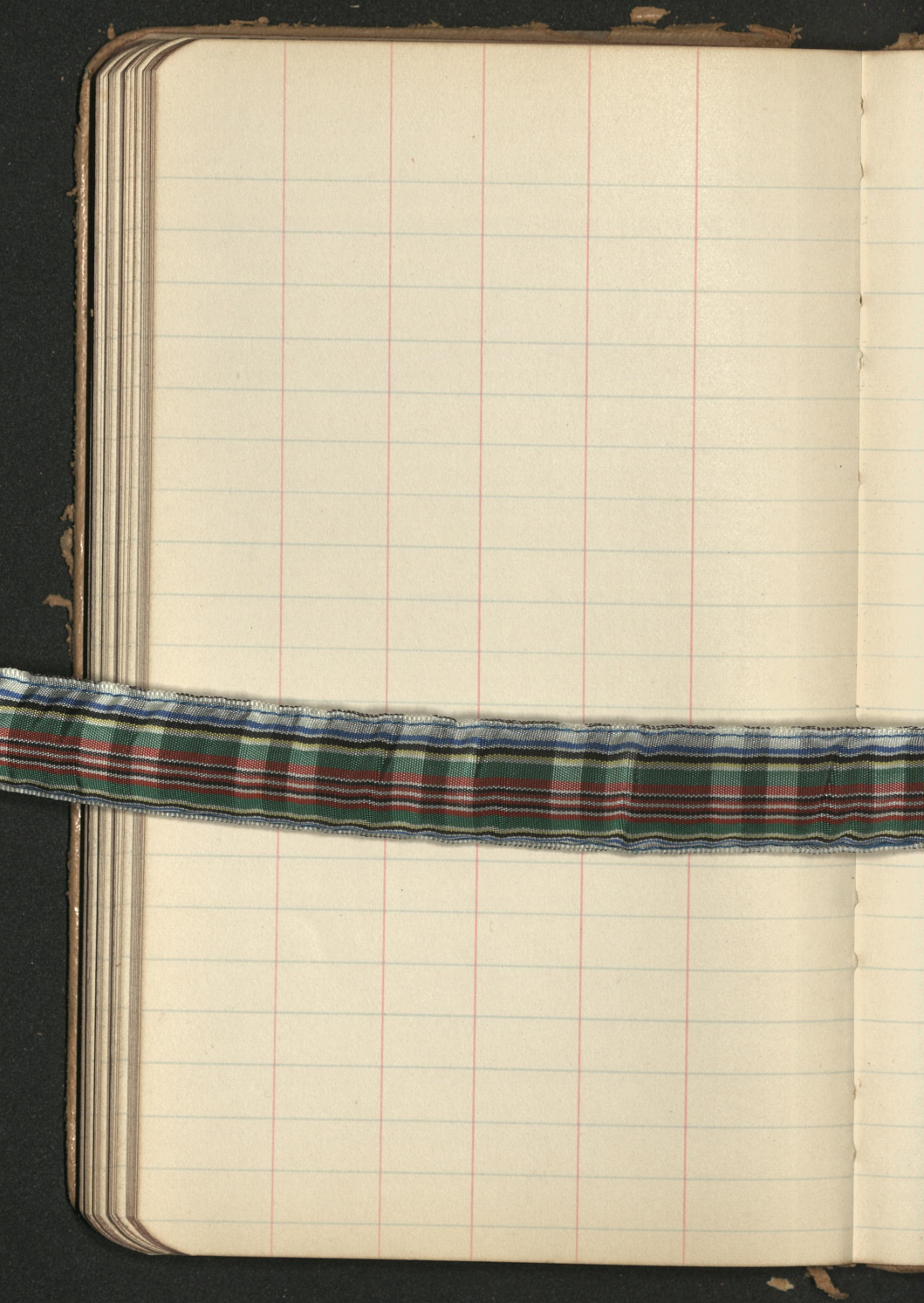
74





75



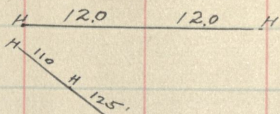




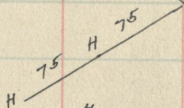
Reference Points

837+13 P.C. 6°R H 15.0 H 15.0 H

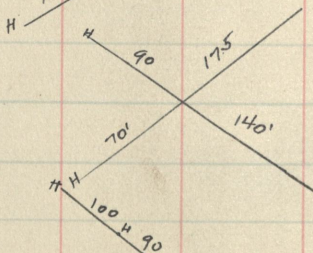
840+70³ P.T.



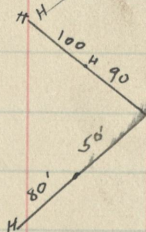
843+97 P.C. 6°L



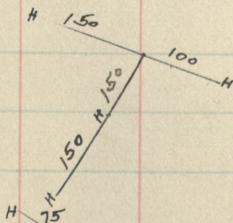
849+98⁷ P.T.



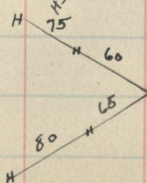
853+54 P.S. 8x12L

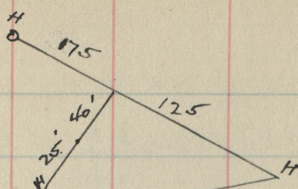


858+28⁵ P.T.

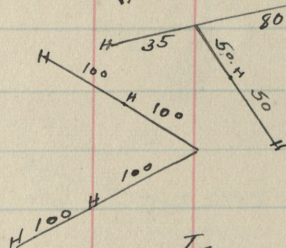


861+30 P.C. 8°R



865+62¹ PT

866+57 P.C. 40L

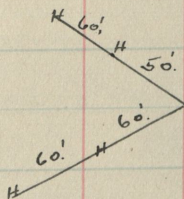
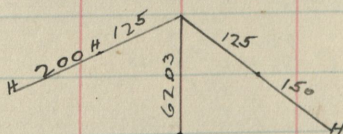
871+03²

872+74 P.S. 8X12 R

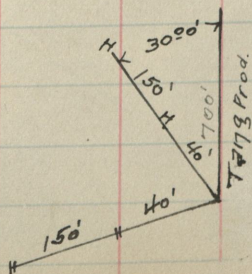
I₁876+72⁹ P.T.

H 12'0 12'0 H

877+69 P.S. 8X12 L

884+89⁸ P.T.

885+52 P.S. 9X10 R

890+10⁹ P.T.

894+40 P.S. 8x12 R # 60 H 25 90° P.O.T.

899+52 P.T.

900+44 P.S. 8x12 L H 15.0 15.0 H

905+318 P.T. H 12'0 H 12'0

919+22 P.C. 60° R H 12'0 12'0

923+859 H 120 H 120 H

936+36¹¹ P.S. 7x12 R H 15.0 H 15.0 32.5' 15'

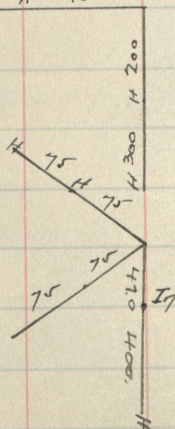
940+27¹¹

940+29¹¹ = P.T.

947+376 P.S. 9x14 L H 40 H 40'

953+18 P.T.

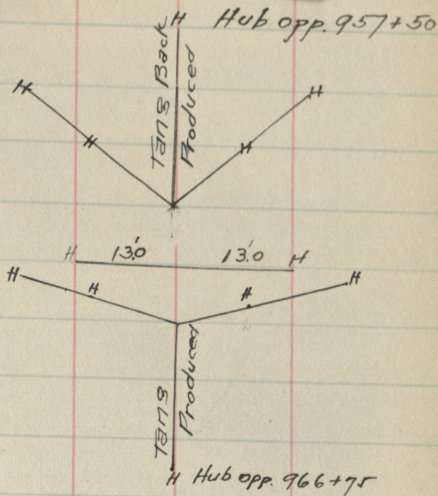
953+65 9x12 R



960+67⁴ P.T.

961+49 P.C.

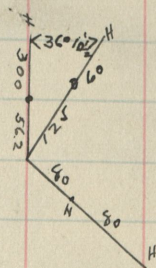
963+75 P.T.



964+89 P.S. 9X10R H 13'0 H 13'0

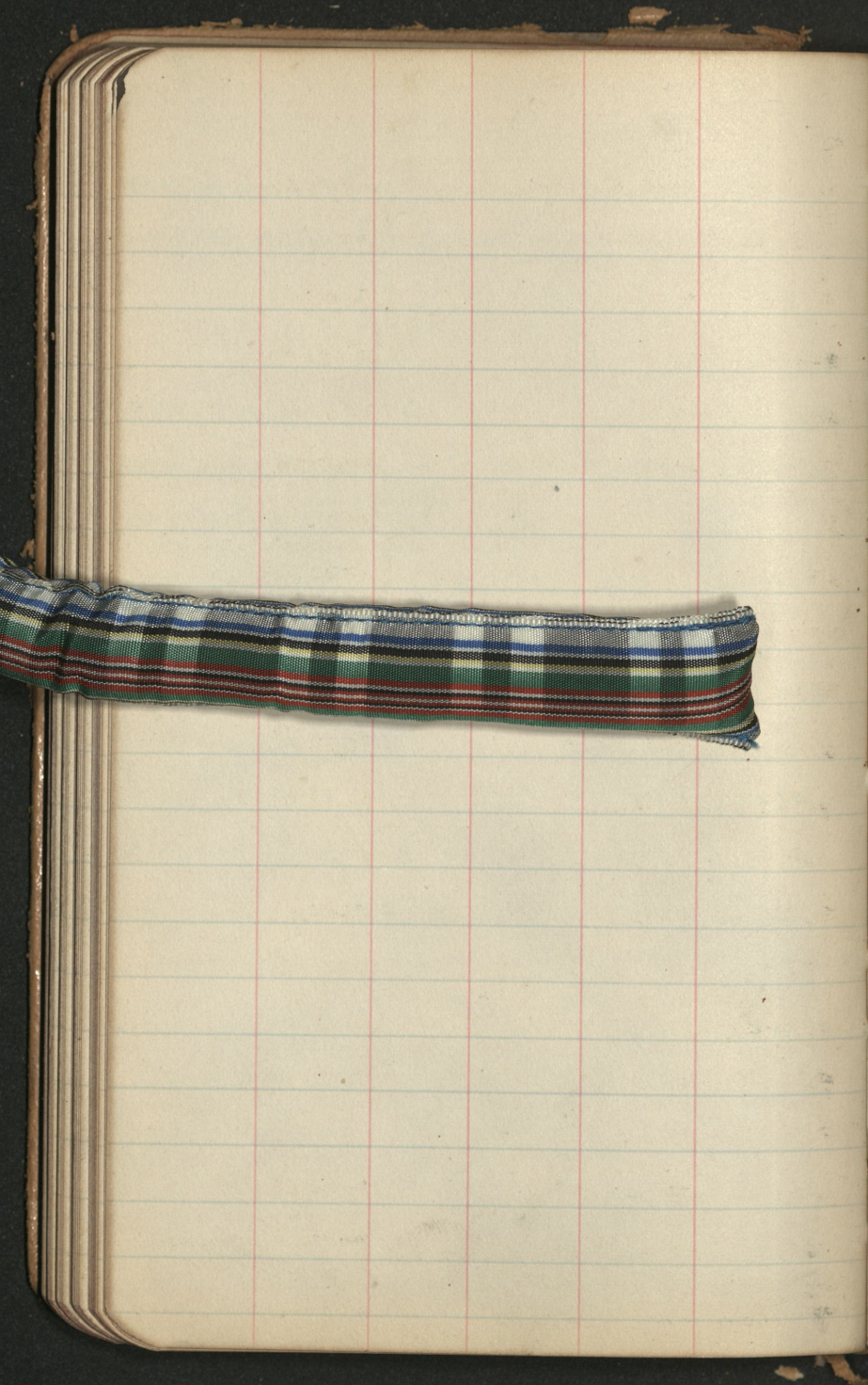
969+07² P.T.

969+64 P.S. 7+12L



979+21³ P.T.

H 13'0 H 13'0



BENCH MARKS

Stations	Distance		Elev.
828	80' R On Hub		3377.04
831+75	60' L	" "	3380.92
838+35	100' L	" "	3403.94
845		" "	3420.87
857+60	40' L	" "	3461.90
867	70' R	" "	3492.20
876	100 L	" "	3518.38
880	40' L	" "	3533.89 3533.63 Back Forward
886+60	40' L	" "	3556.23
894+20	60' L	" "	3574.94
900+25	75' L	" "	3592.40
906	50' L	" "	3608.63
917	80' L	" "	3644.89
926+50	90' L	" "	3673.72
933+75	75' R	" "	3698.12
938+30	40' L	" "	3702.17
943	75' R	" "	3722.09
955+50	30' L	" "	3767.76
961	35' L	" "	3780.66
965	40' L	" "	3796.44
968+45	40' L	" "	3804.27
975+50	70' L	" "	3829.12

